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File 315:ChemEng & Biotec Abs 1970-2004/Aug
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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200459
(c) 2004 Thomson Derwent
*File 350: For more current information, include File 331 in your search. Enter HELP NEWS 331 for details.
File 347:JAPIO Nov 1976-2004/May(Updated 040903)
(c) 2004 JPO & JAPIO
*File 347: JAPIO data problems with year 2000 records are now fixed. Alerts have been run. See HELP NEWS 347 for details.
File 344:Chinese Patents Abs Aug 1985-2004/May
(c) 2004 European Patent Office
File 371:French Patents 1961-2002/BOPI 200209
(c) 2002 INPI. All rts. reserv.
*File 371: This file is not currently updating. The last update is 200209.

Set	Items	Description
S1	1859	(ROTAT?????? OR ROTAR? OR PIVOT?????? OR SWING?????? OR INCLIN?????? OR TURN?????? OR TILT?????? OR ORBIT? OR REVOLV?)(-3N)CONDENSAT?
S2	20885	CONDENSAT?(3N)(TRAP??? OR TEMPERATUR? OR COLD??? OR COOL???? ??)
S3	408000	CONDENSAT?
S4	408000	S1:S3
S5	764303	(LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE OR AQUAS OR H2O OR WATER??)(3N)(GAS OR GASES OR GASEOUS? OR GASIF? OR VAPOR? OR VAPOUR? OR FUME? OR FUMING? OR EFFLUV? OR EFFLUENT? OR EFFUS?. OR EFFLUX? OR VENT? OR DISCHARG? OR EMISS...
S6	225893	(SOLUTION? OR SOLN????? OR SOLVENT? OR RESOLVENT? OR RESOLUTIV? OR DILUENT? OR ELUENT? OR LIQUED? OR ALKAHEST? OR DISSOL? OR SOLUBILIZ? OR SOLUBILIS? OR FLUX? OR FLUID? OR LIXIV?)(-3N)(GAS OR GASES OR GASEOUS? OR GASIF? OR VAPOR? OR V...
S7	1511	(LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE OR AQUAS OR H2O OR WATER??)(3N)BYPRODUCT? ?
S8	430825	(LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE OR AQUAS OR H2O OR WATER??)(3N)(TRAP???? OR SEAL?? OR BLOCK? OR RETAIN? OR ACCUMULAT? OR COLLECT? OR GATHER? OR REMOV? OR MOVE??? OR ROTAT? OR ROTAR? OR PIVOT?????? OR SWING??????)
S9	1551	(GAS OR GASES OR GASEOUS? OR GASIF? OR VAPOR? OR VAPOUR? OR FUME? OR FUMING? OR EFFLUV? OR EFFLUENT? OR EFFUS? OR EFFLUX? OR VENT? OR DISCHARG? OR EMISSION? OR EMANAT? OR OFFGAS? OR -FLUEGAS?)(3N)BYPRODUCT? ?
S10	229098	(REMOV? OR MOVE??? OR ROTAT?????? OR ROTAR? OR PIVOT?????? OR SWING??????)(3N)(LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS - OR AQUAE OR AQUAS OR H2O OR WATER??)
S11	121015	(COLD?? OR COOL?? OR LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE OR AQUAS OR H2O OR WATER??)(3N)(TRAP???? OR SEAL-??. OR BLOCK? OR RETAIN?)
S12	14611	DEW()POINT? ?
S13	511715	DEW OR WATER(1N)DROPLET? OR MOIST?
S14	511715	S12:S13
S15	52215	(COOL???? OR COLD????)(3N)SURFAC?
S16	239913	(PROCESSING OR INTERIOR OR INSIDE OR PORTION? ?)(3N)(CHAMBER???? OR VESSEL??? OR SECTION???? OR MODUL???? OR ENCLOSUR??? OR CAVIT?)
S17	27149	S4 AND S5
S18	3745	S17 AND S6
S19	0	S18 AND S7
S20	401	S18 AND S8
S21	1	S18 AND S9
S22	401	S20 NOT S21
S23	231	S22 AND S10
S24	5	S23 AND S11
S25	5	RD (unique items)
S26	226	S23 NOT S24
S27	7	S26 AND S12
S28	7	RD (unique items)
S29	219	S26 NOT S27
S30	14	S29 AND S13
S31	0	S30 AND S15
S32	0	S30 AND S16
S33	14	RD S30 (unique items)

S34	205	S29 NOT S30
S35	2	S34 AND S15
S36	2	RD (unique items)
S37	203	S34 NOT S35
S38	6	S37 AND S16
S39	6	RD (unique items)
S40	1	S37 NOT S38 AND S1
S41	197	S37 NOT S38
S42	17	S41 AND S2
S43	16	RD (unique items)
S44	67	S1 AND S10
S45	67	S44 AND S8
S46	6	S44 AND S11
S47	6	RD (unique items)
S48	6	S47 NOT S21,S24,S27,S30,S35,S38,S40,S42
S49	61	S45 NOT S46
S50	0	S49 AND S12
S51	0	S49 AND S7
S52	0	S49 AND S16
S53	2	S49 AND S2
S54	2	RD (unique items)
S55	2365	S5 AND S2
S56	101	S55 AND S11
S57	0	S56 AND S7
S58	90	S56 AND S8
S59	0	S58 AND S1
S60	90	S58 AND S2
S61	0	S58 AND S9
S62	10	S58 AND S10
S63	10	RD (unique items)
S64	10	S63 NOT S21,S24,S27,S30,S35,S38,S40,S42,S47

64/3,AB/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01551344 Genuine Article#: HG688 Number of References: 0
(NO REFS KEYED)
Title: RETRIEVAL OF TRITIUM LEAKED FROM HEAVY-WATER FACILITY AND INDOOR MONITORING (Abstract Available)
Author(s): FUKUI M; HAYASHI M
Corporate Source: KYOTO UNIV,INST RES REACTOR/KYOTO 606//JAPAN/
Journal: JOURNAL OF THE ATOMIC ENERGY SOCIETY OF JAPAN, 1992, V34, N2 (FEB), P153-160
Language: JAPANESE Document Type: ARTICLE
Abstract: Tritiated water (HTO), approximately 0.34 TBq leaked from the heavy water facility of the Kyoto University Research Reactor during the period of one and half years, which caused the increase of HTO concentration in water in pools. The amount (46 GBq), 13.6% of the HTO leaked was retrieved as condensate with concentrations of 3 approximately 5 MBq/ml from the graphite block set adjacent to the heavy water tank. About 2.2% (7.4 GBq) of the HTO leaked **moved** into pool **waters** such as primary coolant system and sub-pool via the containment building air of which concentrations have drastically changed according to the history of ventilation. After a few days of the ventilation shut down the HTO concentration in condensate in the containment building air reached a steady state with that on the concrete wall. The concentration in air under such condition decreased with a half-life of ca. 20 weeks corresponding to the attenuation of the amount absorbed in the concrete material after removing and/or isolating the HTO sources. Of the HTO leaked about 80% was estimated to be exhausted soon from the source into the atmosphere, and the residue was retrieved and/or transferred into both **water** and concrete after **discharge**.

64/3,AB/2 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016213486
WPI Acc No: 2004-371373/200435
Rotary-type automatic **water trap** for **discharging condensate** of air conditioner
Patent Assignee: KOREA TECHNO CO LTD (KOTE-N)
Inventor: KIM H Y
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
KR 2004006141	A	20040124	KR 200239678	A	20020709	200435	B

Priority Applications (No Type Date): KR 200239678 A 20020709
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
KR 2004006141	A		1	F24F-013/22	

Abstract (Basic): KR 2004006141 A
Abstract (Basic):
NOVELTY - A **rotary**-type automatic **water trap** for **discharging condensate** of an air conditioner is provided to easily perform an installation process and conveniently maintain in narrow work and installation spaces.

DETAILED DESCRIPTION - A **rotary**-type automatic **water trap** for **discharging condensate**, which is dropped from an evaporator(3) and collected in a hopper(5) mounted to the lower of the evaporator, of an air conditioner(1) is composed of an elbow(7) screw-coupled to the side of the hopper; a ring nipple(9) screw-coupled to the side of the elbow; a U-shaped pipe(11) connected to other side of the ring nipple in an airtight state; a maintaining chamber(13) integrally formed to other side of the U-shaped pipe; and a ball float embedded in the maintaining chamber to intermit the connection of a front end of the U-shaped pipe positioned in the chamber and a condensate discharging port(13a). The maintaining chamber includes the condensate discharging port at the side, a foreign material removing port at the upside, and a plug(13c) formed to the foreign material removing port.

pp; 1 DwgNo 1/10

64/3,AB/3 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015706282
WPI Acc No: 2003-768476/200373
XRAM Acc No: C03-211219
Expansion **cold condensation** for **removing water** from natural **gas**
Patent Assignee: UNIV DALIAN POLYTECHNIC (UYDA-N)
Inventor: FANG Y; LI H; ZOU J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
CN 1154262	A	19970716	CN 96115021	A	19960112	200373	B

Priority Applications (No Type Date): CN 96115021 A 19960112
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CN 1154262	A			B01D-053/26	

Abstract (Basic): CN 1154262 A
Abstract (Basic):

NOVELTY - Before refrigeration, the flow pressure difference of natural gas is used as power energy to fill in alcohol then natural gas to prevent freezing and **blocking** of pipes. The **cold**-evolved moisture is **removed** by separation of **liquid** and **gas**, after dewatering, the cold quantity of the dry gas is used to pre-cold the coming gas.

ADVANTAGE - The process operates with no need for electricity and can separate water and cause the dew point temperature of the natural gas to fall below -30 degrees C.

DwgNo 0/0

64/3,AB/4 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014385078
WPI Acc No: 2002-205781/200226
XRPX Acc No: N02-156748
Wood drying method, for drying timber, involves heating drying chamber to

80-100 degrees C, vacuum blowing timber in chamber and connecting chamber to the atmosphere

Patent Assignee: CHOI S T (CHOI-I); GOLITSYN V P (GOLI-I); GOLITSYNA N V (GOLI-I); HUH N J (HUHN-I); KIM K P (KIMK-I)

Inventor: CHOI S T; GOLITSYN V P; GOLITSYNA N V; HUH N J; KIM K P

Number of Countries: 023 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200188449	A1	20011122	WO 2000KR492	A	20000519	200226 B
KR 2002040761	A	20020530	WO 2000KR492	A	20000519	200276
			KR 2002701050	A	20020118	
US 6640462	B1	20031104	WO 2000KR492	A	20000519	200374
			US 200230107	A	20020530	

Priority Applications (No Type Date): WO 2000KR492 A 20000519

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200188449	A1	E	26	F26B-001/00	
KR 2002040761	A		1	F26B-003/00	
US 6640462	B1			F26B-007/00	Based on patent WO 200188449

Designated States (National): CA ID JP KR US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Abstract (Basic): WO 200188449 A1

Abstract (Basic):

NOVELTY - Trapper (2) is designed for **trapping** resins and partially **water**, filter (3) **traps** small particles of wood and trappers (4) **trap** and **remove condensation** of **water vapors** through airlock containers without loss of sealing of vacuum blowing line.

DETAILED DESCRIPTION - Vacuum is supplied from receiver (5) to carry out high speed vacuum blowing in drying chambers (1) in 0.1-5.0 seconds and vacuum is established using vacuum pumps (6), while extracted **water** is **collected** in **collector** (7). Timber is stacked in multiple layers on a cart, the chamber is sealed and heating and evacuation is carried out.

AN INDEPENDENT CLAIM is included for a system of drying timber.

USE - For drying wood, timber.

ADVANTAGE - Reduced time, power and cost of drying.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic view of the wood drying system.

Drying chambers (1)

Resin trapper (2)

Particle filter (3)

Condensate trappers (4)

Vacuum receiver (5)

Pumps (6)

Water collector (7)

pp; 26 DwgNo 1/2

64/3,AB/5 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

009065257

WPI Acc No: 1992-192648/199224

XRAM Acc No: C92-088141

Sepn. of deuterium isotopes from water, as heavy water, by distn. - for

use as the moderator in a nuclear reactor
Patent Assignee: SANDORINO C (SAND-I)
Inventor: SANDORINO C
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
CA 2024414	A	19920301	CA 2024414	A	19900831	199224	B
CA 2024414	C	19990914	CA 2024414	A	19900831	200004	

Priority Applications (No Type Date): CA 2024414 A 19900831
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CA 2024414	A	F	43	B01D-059/04	
CA 2024414	C	F		B01D-059/32	

Abstract (Basic): CA 2024414 A

Process comprises a) enrichment of water with heavy water by bubbling with hydrogen sulphide gas; b) passing through a series of vertical columns under vacuum, at about 0.02 torr; c) D2O enriched water is fed to the top of the first of a pair of columns where injection of steam transforms **water** to **vapour**; d) transfer of this vapour to the second of the pair of columns containing plates with **condensation traps**; e) D2O enriched **water collects** at the base of this column and **H2O** vapour rises; f) **H2O** is **removed** from the top of the column; g) **H2O** is **removed** from the base and subjected to further enrichment (steps c to g) until the requried concn. is reached.

USE/ADVANTAGE - High yield in the sepn. columns, compared to existing techniques, allows them to be smaller, a few meters in height, instead of hundreds of meters, thus reducing costs. Prodn. of heavy water from fresh or salt water for use as the moderator in nuclear reactors

Dwg.0/8

64/3,AB/6 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007585565
WPI Acc No: 1988-219497/198831
XRPX Acc No: N88-167329
Condenser for refrigeration or heat pump appts. - has gas injected at lower header and liquid extracted at upper header to keep inner surface of pipe wet
Patent Assignee: MALNAR D (MALN-I)
Inventor: MALNAR D
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4757695	A	19880719	US 8729643	A	19870324	198831	B
CA 1315113	C	19930330	CA 566673	A	19880512	199318	N

Priority Applications (No Type Date): US 8729643 A 19870324; CA 566673 A 19880512
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4757695	A		5		
CA 1315113	C			F25B-039/04	

Abstract (Basic): US 4757695 A

The condenser is formed from several pipes connected to a header. Each pipe defines a lowermost straight portion on which several convoluted straight portions are provided in the same vertical plane. Each straight portion is connected to the next by a curved connecting portion of a radius of curvature equal to the spacing between each straight portion and the next straight portion so that the connecting portion extends to a height above the upper straight portion to which it is connected to.

Each straight portion acts as a **liquid trap** to **retain** the **condensate** with the condensate and gas being bubbled over each connecting portion to **move** into the next **liquid trap**. The **gas** is injected at the lower header and the liquid extracted at the upper header. This tends to keep the inner surface of the pipe wet with the condensate.

ADVANTAGE - Improved heat transfer and reduced overall size.

1/2

64/3,AB/7 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

000963149
WPI Acc No: 1973-40404U/197330
Related WPI Acc No: 1973-27362U
Electrically heated distillation appts - with improved boiler and entrained **liquid trap**
Patent Assignee: CAMPILLO ALONSO J (ALO -I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
FR 2155178	A					197330 B

Priority Applications (No Type Date): ES 395474 A 19710927; ES 395474 A 19710927

Abstract (Basic): FR 2155178 A

The electric heating elements in the boiler of a distillation appts., esp. for water, are enclosed by a perforated cylindrical vessel, and are tubular with orifices through which **liquid** and **vapour** circulate, so as to render inner and outer surfaces effective in heating. Entrained **liquid** is **removed** from **vapour** by a filter, which may be of glass rings, and by a vertical cylindrical trap, which is concentric inside a perforated cylinder closed at the top, around which is wound the serpentine condensing coil, cooled by water preheated in the **condensate cooler**; part of this water is used as the feed to the boilers, to conserve heat.

64/3,AB/8 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

03856419
HOUSING INCORPORATING STEAM EJECTION FAN

PUB. NO.: 04-221519 [JP 4221519 A]
PUBLISHED: August 12, 1992 (19920812)
INVENTOR(s): TANASE TAKAFUMI

NAGAKOSHI TOSHIAKI
APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 02-404851 [JP 90404851]
FILED: December 21, 1990 (19901221)
JOURNAL: Section: C, Section No. 1009, Vol. 16, No. 566, Pg. 116, December 08, 1992 (19921208)

ABSTRACT

PURPOSE: To enhance the attaching and **removing** ability of a **water trap** which is **removably** attached to a storage space of a housing incorporating a vapor ejecting fan for reserving **condensate** in the **water trap**, by condensing **vapor** produced from a cooking utensil stored in the storage section.

CONSTITUTION: A part of the upper surface of a **water trap** 69 is projected so as to form an inflow port 70, and guide ribs 71 are projected from the bottom surface of the **water trap** 69. The **water trap** 69 makes contact at its front and outside parts with a storage section 32, and is supported at its upper inflow port 70 part. With this arrangement, the **water trap** is **removably** held guide ribs 73 which make contact with the rear section and inward section of the guide ribs 71.

64/3,AB/9 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

00554228
DISTILLATION EQUIPMENT

PUB. NO.: 55-041828 [JP 55041828 A]
PUBLISHED: March 24, 1980 (19800324)
INVENTOR(s): SANO HIDEO
APPLICANT(s): SANO HIDEO [000000] (An Individual), JP (Japan)
APPL. NO.: 53-114379 [JP 78114379]
FILED: September 18, 1978 (19780918)
JOURNAL: Section: C, Section No. 13, Vol. 04, No. 77, Pg. 17, June 04, 1980 (19800604)

ABSTRACT

PURPOSE: To produce distilled water in an inexpensive way, air in a **sealed water** container is **removed** to reduce the pressure and water is heated, then the refrigerator in the container is operated.

CONSTITUTION: Water is charged in the container 1 and sealed, then the vacuum pump 2 is actuated to reduce the pressure in the container 1 to remove air inside. This causes the water to become easy to evaporate, and the container 1 is mostly filled with **water vapor**. After heating to partly generate steam, the refrigerator 3 is run to condense steam at the cooling area of the refrigerator 3 and condensed **water** is **collected** in the **trap**. Steam **condensation** reduces the **vapor** pressure of **water**, which acts to increase water evaporation. On the other hand, water evaporation takes the heat of evaporation decreasing its temperature, which acts to decrease water evaporation. The refrigerator 3 receives the heat of condensation at its upper part of cooling area, which is used to vaporize refrigerant. The vaporized refrigerant returns to the refrigerator 3 where it is compressed. The compressed, and thus heated refrigerant is passed through water to be cooled and liquefied to **discharge** heat into **water**, raising

water temperature and resulting in accelerated evaporation of water.

64/3,AB/10 (Item 1 from file: 344)
DIALOG(R)File 344:Chinese Patents Abs

Acc no: 4124261
METHOD AND EQUIPMENT FOR EXPANSION COLD CONDENSATION FOR REMOVING WATER FROM NATURAL GAS
Patent Assignee: DALIAN POLYTECHNICAL UNIV (CN)
Author (Inventor): YAOQI FANG (CN); HONG-AN LI (CN); JIUPENG ZOU (CN)
Patent Family:

CC	Number	Kind	Date	
CN	1154262	A	19970716	(Basic)

Application Data:

CC	Number	Kind	Date
*CN	96115021	A	19960112

Abstract: Bafore refrigeration, the flow pressure difference of natural gas is used as power energy to fill in alcohol then natural gas so as to prevent freezing and blocking of pipes. The cold-evolved moisture is removed by separation of liquid and gas, after dewatering, the cold quantity of the dry gas is used to precold the coming gas. This method can operate with no need of electricity and can separatewater drastically and cause the dew point temp. of the natural gas bellow -30 deg.C. This installation is composed of equipments specially prepared for this method.
? DS

21/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014039101
WPI Acc No: 2001-523314/200158
XRAM Acc No: C01-156411
Processing a **liquid discharge** from a continuous hydroformylation process comprises using two depressurization steps to effect separation into **liquid** and **gas** phases
Patent Assignee: BASF AG (BADI); GEISSLER B (GEIS-I); KROKOSZINSKI R (KROK-I); MUELLER R (MUEL-I); WALCZUCH K (WALC-I)
Inventor: GEISSLER B; KROKOSZINSKI R; MUELLER R; WALCZUCH K
Number of Countries: 095 Number of Patents: 012
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 1020006489	A1	20010816	DE 12000006489	A	20000214	200158	B
WO 200158844	A2	20010816	WO 2001EP1582	A	20010213	200158	
AU 200140616	A	20010820	AU 200140616	A	20010213	200175	
EP 1255720	A2	20021113	EP 2001911637	A	20010213	200282	
			WO 2001EP1582	A	20010213		
US 20030013919	A1	20030116	WO 2001EP1582	A	20010213	200308	
			US 2002203293	A	20020808		
KR 2002076305	A	20021009	KR 2002710467	A	20020813	200314	
CN 1400961	A	20030305	CN 2001804852	A	20010213	200338	
EP 1255720	B1	20030910	EP 2001911637	A	20010213	200360	
			WO 2001EP1582	A	20010213		
DE 5020100605	G	20031016	DE 2001500605	A	20010213	200369	
			EP 2001911637	A	20010213		
			WO 2001EP1582	A	20010213		
JP 2004506602	W	20040304	JP 2001558396	A	20010213	200417	
			WO 2001EP1582	A	20010213		
US 6727391	B2	20040427	WO 2001EP1582	A	20010213	200429	
			US 2002203293	A	20020808		
ES 2207608	T3	20040601	EP 2001911637	A	20010213	200437	

Priority Applications (No Type Date): DE 12000006489 A 20000214
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 1020006489	A1		6	C07C-045/50	
WO 200158844	A2	G		C07C-045/50	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200140616	A			C07C-045/50	Based on patent WO 200158844
EP 1255720	A2	G		C07C-045/50	Based on patent WO 200158844
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030013919	A1			C07C-045/81	
KR 2002076305	A			C07C-045/50	
CN 1400961	A			C07C-045/50	
EP 1255720	B1	G		C07C-045/50	Based on patent WO 200158844
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
DE 5020100605	G			C07C-045/50	Based on patent EP 1255720 Based on patent WO 200158844
JP 2004506602	W		28	C07C-045/50	Based on patent WO 200158844

US 6727391	B2	C07C-045/50	Based on patent WO 200158844
ES 2207608	T3	C07C-045/50	Based on patent EP 1255720

Abstract (Basic): DE 10006489 A1

Abstract (Basic):

NOVELTY - Processing a **liquid discharge** from a continuous hydroformylation process comprises reducing the pressure of the discharge in a first depressurization step to a pressure 2-20 bar below that of the reaction pressure to effect a separation into a **liquid** phase and a **gas** phase and further depressurizing the resulting liquid phase to effect a separation to form a **liquid** phase and a **gas** phase.

DETAILED DESCRIPTION - Processing a **liquid discharge** from a continuous hydroformylation process, essentially comprising aldehyde, high boiling byproducts, a dissolved homogeneous hydroformylation catalyst, unreacted olefin, low boiling **byproducts** and **dissolved** synthesis **gas** comprises (A) reducing the pressure of the discharge in a first depressurization step to a pressure 2-20 bar below that of the reaction pressure to effect a separation into a **liquid** phase and a **gas** phase (B) further depressurizing the resulting liquid phase to effect a separation to form a liquid phase essentially comprising high boiling byproducts, the hydroformylation catalyst, small amounts of the hydroformylation product and unreacted olefin, and a gas phase essentially comprising the hydroformylation product, unreacted olefin and low boiling byproducts.

USE - The process is useful for the treatment of a **liquid discharge** product from a continuous hydroformylation process.

ADVANTAGE - The process is economical and does not require a large condenser with a high energy requirement.

pp; 6 DwgNo 0/1

25/3,AB/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04992436
E.I. No: EIP98044161788
Title: Comparison of thermoelectric and permeation dryers for sulfur dioxide removal during sample conditioning of wet gas streams
Author: Dunder, Thomas A.; Leighty, David A.
Corporate Source: Entropy, Inc, Research Triangle Park, NC, USA
Conference Title: Proceedings of the 1997 Air & Waste Management Association's 90th Annual Meeting & Exhibition
Conference Location: Toronto, Can Conference Date: 19970608-19970613
E.I. Conference No.: 48211
Source: Proceedings of the Air & Waste Management Association's Annual Meeting & Exhibition 1997. Air & Waste Management Assoc, Pittsburgh, PA, USA. 11p 97-MP7.04
Publication Year: 1997
CODEN: PAMEE5
Language: English
Abstract: Flue gas conditioning for moisture removal is commonly performed for criteria pollutant measurements, in particular for extractive CEM systems at combustion sources. An implicit assumption is that conditioning systems specifically remove moisture without affecting pollutant and **diluent** concentrations. **Gas** conditioning is usually performed by passing the flue gas through a **cold trap** (Peltier or thermoelectric dryer) to remove moisture by **condensation**, which is subsequently extracted by a peristaltic pump. Many air pollutants are water-soluble and potentially susceptible to removal in a **condensation** dryer from **gas** interaction with **liquid** **water**. An alternative technology for gas conditioning is the permeation dryer, where the flue gas passes through a selectively permeable membrane for moisture **removal**. In this case **water** is transferred through the membrane while other pollutants are excluded, and the gas does not contact condensed liquid. Laboratory experiments were performed to measure the relative **removal** of a **water**-soluble pollutant (sulfur dioxide, SO2) by the two conditioning techniques. A wet gas generating system was used to create hot, wet gas streams of known composition (15% and 30% moisture, balance nitrogen) and flow rate. Pre-heated SO2 was dynamically spiked into the wet stream using mass flow meters to achieve concentrations of 20, 50, and 100 ppm. The spiked gas was directed through a heated sample line to either a thermoelectric or a permeation conditioning system. Two gas analyzers (Western Research UV gas monitor, KVB/Analect FIR spectrometer) were used to measure the SO2 concentration after conditioning. Both analytic methods demonstrated that SO2 is removed to a significantly greater extent by the thermoelectric dryer. These results have important implications for SO2 monitoring and emissions trading. (Author abstract)

25/3,AB/2 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013388249
WPI Acc No: 2000-560187/200052
XRAM Acc No: C00-166972
XRPX Acc No: N00-414704
Removing water from surface of e.g. semiconductor in drying vessel, by heating and **vaporizing** two **fluids**, contacting

vaporized fluids, condensing, **collecting**, separating **fluids** and recycling fluid(s)

Patent Assignee: DALE P (DALE-I); HENLY S R (HENL-I)
Inventor: DALE P; HENLY S R

Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2346953	A	20000823	GB 993361	A	19990216	200052	B

Priority Applications (No Type Date): GB 993361 A 19990216
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2346953	A		25	F26B-021/14	

Abstract (Basic): GB 2346953 A
Abstract (Basic):

NOVELTY - Components can be cleaned thoroughly and rinsed, and any remaining **water** completely **removed** from the components, to leave components stain free and dry upon completion of the process.

DETAILED DESCRIPTION - **Removing water** from the surface of an article in a drying vessel containing a drying **fluid**, comprising heating and **vaporizing** two **fluids**, contacting the **vaporized fluids** and condensing, **collecting**, separating the **fluids** and recycling at least one of the fluids.

INDEPENDENT CLAIMS are also included for:

(1) an apparatus for **removing water** from the surface of articles by the claimed method;

(2) drying articles using the apparatus in (1);

(3) an apparatus for displacing a liquid and drying articles using the claimed process; and

(4) drying semiconductor wafers using the claimed method.

USE - Used for **removing water** from articles such as microcircuitry, semiconductor wafer, glass or ceramic substrate, and other patterned depositions formed on a substrate.

ADVANTAGE - The components must be stain free and dry upon completion of the process. The materials and methods do not degrade, attack or modify the article in any way.

DESCRIPTION OF DRAWING(S) - The drawing illustrates the apparatus for performing the claimed process.

Drying vessel (2)
Dense perfluorocarbon fluid (40)
IPA (41)
Heater (27)
Additional heaters (10)
Thermocouples (42)
Cooling coils (7)
Plates (3)
Vapor (8)
Troughs (23)
Component carrier (12)
Low level sensors (19, 20)
Articles to dried (11)
Tube (14)
Valve (15)
Separation chamber (16)
Pump (24)
Check valve (25)
Tube (26)
Chamber (32)
Level Devices (30, 31)

U-tube (34)
outlet tube (43)
Point valve (28)
Filter (37)
pp; 25 DwgNo 1/1

25/3,AB/3 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012063171
WPI Acc No: 1998-480082/199841
XRPX Acc No: N98-374544
Check value and **fluid trap** assembly used in **fluid** drain system for air conditioner, cooler, ice makers - has ball float seated on float seat within float seat unless water flows through fluid **trap**, such that **water** or **gas** does not enter **fluid trap** through outflow opening
Patent Assignee: POWELL E O (POWE-I)
Inventor: POWELL E O
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5797426	A	19980825	US 97838729	A	19970410	199841	B

Priority Applications (No Type Date): US 97838729 A 19970410
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5797426	A		5	F16K-015/04	

Abstract (Basic): US 5797426 A
The assembly includes a float housing (11) with a ball float (1) positioned on a float seat (21) that is directly connected to a U-shaped **fluid trap** (30). A float seat with an O- ring (22) is enclosed within the float seat. The **fluid trap** has an inflow conduit (31) with inflow opening connected to exit side of fluid drain system.

The inflow conduit is connected with the outflow conduit whose outlet is connected to the float seat. The ball float is seated on float seal within float seat unless **water** flows through **fluid trap**. **Water** and **gas** are prevented from entering **fluid trap** through outflow conduit but excess **water moves** ball float from float seat to allow water to flowout of it.

ADVANTAGE - Facilitates easy connection with outflow opening of **condensate** moisture drain system. Prevents backflow of fluid and contaminants in drain system.

Dwg.2/4

25/3,AB/4 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009166667
WPI Acc No: 1992-294101/199236
XRAM Acc No: C92-130730
Improved evaporation appts. with solvent recovery feature - uses substantially vertical **condensation** tube whose base terminates in

annular accumulator from which solvent is recovered through drain
Patent Assignee: ZYMARK CORP (ZYMA-N); SIEMAG CORP (SIEJ)
Inventor: ROE J S; SIMONSON L A
Number of Countries: 005 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 501665	A1	19920902	EP 92301346	A	19920219	199236	B
US 5176799	A	19930105	US 91662151	A	19910228	199304	
JP 5092101	A	19930416	JP 9278815	A	19920228	199320	
EP 501665	B1	19950823	EP 92301346	A	19920219	199538	
DE 69204185	E	19950928	DE 604185	A	19920219	199544	
			EP 92301346	A	19920219		

Priority Applications (No Type Date): US 91662151 A 19910228
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 501665	A1	E	10	B01D-001/14	
Designated States (Regional): DE FR GB					
US 5176799	A		8	B01D-003/00	
JP 5092101	A		6	B01D-003/00	
EP 501665	B1	E	11	B01D-001/14	
Designated States (Regional): DE FR GB					
DE 69204185	E			B01D-001/14	Based on patent EP 501665

Abstract (Basic): EP 501665 A

Evaporator with solvent recovery feature comprises (a) a vessel (40) with an opening (52) at its top and forming an evaporation chamber (55) to hold a liquid; (b) a condenser (24) disposed above and sealed to the vessel (40) and having a wall (63) defining a **condensation** chamber (66) communicating with the evaporation chamber (55) through the opening (52), an **accumulator** (62) receives **liquid** condensed on the wall (63), and a drain for **removing liquid** received by the **accumulation**; (c) a **fluid** drive (23) above the condenser produces fluid flow downwardly through the **condensation** chamber (66) and into contact with a liquid in the evaporation chamber (55) and then upwardly into the **condensation** chamber (66); (d) a heater (13,25) for the liquid in the evaporation chamber (55) to cause its evaporation; and (e) a cooler (68) for the wall (63) to produce **condensation** thereon of **vapour** included in the **fluid** flowing upwardly from the evaporation chamber (55).

ADVANTAGE - The improved evaporation appts. provides for solvent recovery as the wall includes a substantially vertical **condensation** tube, whose base terminates in the annular accumulator from which the solvent is conveniently recovered through the drain provided

Dwg.3/3

Abstract (Equivalent): EP 501665 B

Apparatus for removing solvent from a solution by evaporating the solvent, said apparatus comprising: vessel means defining an opening at the top thereof and forming an evaporation chamber to hold a liquid composition; condenser means disposed above and sealed to said vessel means and having wall means defining a **condensation** chamber in communication with said evaporation chamber through said opening, **accumulator** means for receiving **liquid** condensed on said wall means, and drain means for **removing liquid** received by said **accumulator** means; **fluid** drive means disposed above said condenser means for producing fluid flow downwardly through said **condensation** chamber and into contact with a liquid composition in said evaporation chamber and then upwardly into said

condensation chamber; heating means for heating the liquid composition in said evaporation chamber so as to cause evaporation thereof; and cooling means for cooling said wall means so as to produce **condensation** thereon of **vapor** included in the **fluid** flowing upwardly from said evaporation chamber.

Dwg.0/3

Abstract (Equivalent): US 5176799 A

Evaporator for use in laboratory analysis proucts has a base console defining a reservoir for **retaining liquid** heated by an element, with retainer openings to accommodate evapn. vessels. The evapn. assembly includes a lower cylindrical vessel and an upper solvent supply housing with a condenser assembly above which is a fluid drive assembly including a fan chamber, the fan producing fluid flow in a helical path to enhance evapn.

ADVANTAGE - Provides for solvent recovery in large amounts.

Dwg.0/3

25/3,AB/5 (Item 1 from file: 347)

03529703

LIGHTING EQUIPMENT

PUB. NO.: 03-192603 [JP 3192603 A]
PUBLISHED: August 22, 1991 (19910822)
INVENTOR(s): KATAOKA KENJI
APPLICANT(s): MITSUBISHI ELECTRIC CORP [000601] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 01-333623 [JP 89333623]
FILED: December 21, 1989 (19891221)
JOURNAL: Section: M, Section No. 1180, Vol. 15, No. 452, Pg. 75, November 18, 1991 (19911118)

ABSTRACT

PURPOSE: To lower the temperature of a ballast by providing a heat pipe with a working **fluid sealed** therein, and a ringed heat radiation fin arranged on the other side of the heat pipe.

CONSTITUTION: When a switching device in a ballast (b) is ON-operated, a ring lamp 1 is lighted. The switching device of the ballast (b) is heated, and thereby the ballast (b) is heated into a high temperature condition, however, one side 11a of a heat pipe 11 is heated by the heating value, which is lost as latent heat of **vaporization** when a working **fluid** in the heat pipe is heated and vaporized, and the vapor of the **vaporized** working **fluid** is **moved** to the other side 11b of the heat pipe 11 by utilizing the vapor pressure of itself. The **vapor** of the working **fluid moved** to the other side 11b of the heat pipe 11 is cooled by a ringed heat radiation fin 12, and is condensed into a liquid, while latent heat of **condensation** is emitted to the ringed heat radiation fine 12, and the heat of the ballast (b) is emitted in the surrounding air through the ringed heat radiation fin 12. The switching element of the ballast (b) can be protected against heat thereby, and long life of the ballast (b) can be achieved.

28/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014508498
WPI Acc No: 2002-329201/200236
XRAM Acc No: C02-095048
XRPX Acc No: N02-258417
Fluid phase measurement apparatus, for use in hydrocarbon production, comprises resonant cavity with variable volume pressure chamber, probe and sensors to establish fluid phase transition based on changes of resonant properties in cavity
Patent Assignee: UNIV WESTERN AUSTRALIA (UYWA-N); EDWARDS C (EDWA-I); EDWARDS T J (EDWA-I); MANN A G (MANN-I); MAY E F (MAYE-I)
Inventor: EDWARDS C; EDWARDS T J; MANN A G; MAY E F
Number of Countries: 097 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200201211	A1	20020103	WO 2001AU784	A	20010628	200236	B
AU 200167158	A	20020108	AU 200167158	A	20010628	200236	
NO 200206144	A	20030212	WO 2001AU784	A	20010628	200321	
			NO 20026144	A	20021220		
EP 1311833	A1	20030521	EP 2001944757	A	20010628	200334	
			WO 2001AU784	A	20010628		
US 20030155926	A1	20030821	WO 2001AU784	A	20010628	200356	
			US 2003312889	A	20030218		

Priority Applications (No Type Date): AU 20008429 A 20000628
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200201211	A1	E	36	G01N-022/00	
	Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW				
	Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW				
AU 200167158	A			G01N-022/00	Based on patent WO 200201211
NO 200206144	A			G01N-022/00	
EP 1311833	A1	E		G01N-022/00	Based on patent WO 200201211
	Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR				
US 20030155926	A1			G01L-021/30	

Abstract (Basic): WO 200201211 A1
Abstract (Basic):
NOVELTY - A fluid phase behavior measurement apparatus comprises an electromagnetic resonant cavity in communication with a variable volume pressure chamber, a probe to excite and monitor electromagnetic resonance of the cavity, sensors for monitoring fluid in the cavity and a signal processor to calculate phase transition in the fluid based on detected changes of resonant properties in the cavity.

DETAILED DESCRIPTION - A fluid phase behavior measurement apparatus comprises an electromagnetic resonant cavity (36), operating at up to microwave frequencies, with resonant properties sensitive to the presence and volume of liquid phase, in communication with a pressure chamber (38) of variable volume, a probe to excite and monitor electromagnetic resonance of the cavity, sensors for monitoring pressure and temperature of fluid in the cavity and a signal processor connected to probe and sensors to calculate phase transition in the

fluid based on detected changes of resonant properties in the cavity.

An INDEPENDENT CLAIM is included for a method for measuring the phase behavior of a fluid, using the above apparatus.

USE - For measuring dielectric properties of natural **gas** and **gas condensate fluids** in petroleum and hydrocarbon production.

ADVANTAGE - It is important to understand the phase behavior of **gas** and **condensate fluids**, which affect the economic and efficient separation of **gases** and **liquids**, extraction of LPG, **removal** of carbon dioxide and water from product streams and production of LNG. Prior systems to measure the phase behavior of multi component hydrocarbon mixtures were designed for use with oil mixtures, with little use for gas **condensates**, unless used with expensive and large units, in which a sample take a very long time to come to equilibrium, such that it is very slow to develop a phase envelope. A radio frequency cavity resonator was developed, which was much cheaper than the above volumetric method, but had a fixed volume, and was tested only on mixtures that showed a dramatic change as the **dew point** curve was crossed. The novel system is an improved microwave resonator, for measuring dielectric properties and phase envelope for natural **gas** and **gas condensate fluids**, with a preferential geometry and variable volume, to measure the phase behavior more accurately than previously.

DESCRIPTION OF DRAWING(S) - The drawing shows a resonant cavity and variable volume pressure chamber in an apparatus for measuring phase envelope of a **gas condensate fluid**.

resonant cavity (36)
pressure chamber (38)
bellows (42)
pp; 36 DwgNo 3/8

28/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011754059
WPI Acc No: 1998-170969/199816
XRAM Acc No: C98-054750

Water and higher hydrocarbon **removal** from methane-containing gas - comprises solvent extraction process using alcohol or ether, e.g. methanol

Patent Assignee: INST FRANCAIS DU PETROLE (INSF)
Inventor: DOERLER N; LARUE J; LEBAS E; ROJEY A
Number of Countries: 030 Number of Patents: 013
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 831142	A1	19980325	EP 97402177	A	19970918	199816	B
FR 2753719	A1	19980327	FR 9611694	A	19960924	199819	
NO 9704396	A	19980325	NO 974396	A	19970923	199823	
JP 10102076	A	19980421	JP 97258725	A	19970924	199826	
CA 2215157	A	19980324	CA 2215157	A	19970923	199834	
US 5868005	A	19990209	US 97936097	A	19970923	199913	
MX 9707250	A1	19980901	MX 977250	A	19970923	200017	
RU 2179569	C2	20020220	RU 97116008	A	19970923	200229	
EP 831142	B1	20021211	EP 97402177	A	19970918	200282	
DE 69717747	E	20030123	DE 617747	A	19970918	200315	
			EP 97402177	A	19970918		
CN 1186797	A	19980708	CN 97121414	A	19970924	200336	
MX 209140	B	20020723	MX 977250	A	19970923	200366	

NO 315696 B1 20031013 NO 974396 A 19970923 200368

Priority Applications (No Type Date): FR 9611694 A 19960924
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 831142	A1	F	10	C10L-003/10	
Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT RO SE SI					
FR 2753719	A1		18	C10L-003/08	
NO 9704396	A			B01D-053/14	
JP 10102076	A		7	C10L-003/10	
CA 2215157	A			C07C-007/09	
US 5868005	A			F25J-001/00	
MX 9707250	A1			B01D-053/00	
RU 2179569	C2			C10G-005/06	
EP 831142	B1	F		C10L-003/10	
Designated States (Regional): DE DK GB IT					
DE 69717747	E			C10L-003/10	Based on patent EP 831142
CN 1186797	A			C07C-007/00	
MX 209140	B			B01D-053/00	
NO 315696	B1			B01D-053/14	Previous Publ. patent NO 9704396

Abstract (Basic): EP 831142 A

The treatment of a **gas** containing methane and **water** and at least one hydrocarbon higher than methane to remove these impurities comprises: (a) separation of the gas to be treated into separate flows (1, 2); (b) contact of flow (2) with a recycled liquid phase containing water and a solvent, where the solvent comprises a non-hydrocarbon liquid organic compound, at least partially miscible with water and distillable at a lower temperature, to give a liquid aqueous phase depleted in solvent (compared to the recycled **fluid**) and a **gaseous** phase charged with **solvent**; (c) separation of the two phases; (d) contacting the solvent-depleted **liquid** phase with the **gas** flow (1), free of solvent, in a contact zone (G1), the solvent being extracted from this phase by the gas, providing a **gaseous** phase rich in **solvent** and an aqueous regenerated **liquid**; (e) mixing the **gaseous** phase from (d) either with the **solvent**-charged **gaseous** phase from (b) or with the gas flow (2), free of solvent, of stage (a); (f) cooling the gaseous mixture to partially condense out an aqueous phase and hydrocarbon phase, both containing solvent, and producing the treated **gas** free from **water** and hydrocarbons; (g) separating the phases from (f); and (h) recycling the solvent-enriched aqueous phase to step (b).

USE - The process is used to eliminate **water**, liquified petroleum **gases** and gasolines (C5+) from natural gas and refinery **gases**. The presence of **water** is deleterious in promoting hydrate formation, which can cause line blockages and corrosion, in the presence of acid compounds such as hydrogen sulphide (H2S) and carbon dioxide (CO2). The extraction of LPGs and gasolines raises the **dew point** and thus avoids **condensation** of hydrocarbons during transport.

ADVANTAGE - The process is a refinement of a known technique. Significant investment gains and reduced proportions of equipment are possible, and water and solvent contact separations avoid the need for distillation methods. The installation is particularly advantageous in marine hydrocarbon production.

Dwg.1,2/3

28/3,AB/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

010682404
WPI Acc No: 1996-179359/199618
XRAM Acc No: C96-056579
Separating well **fluids** from a **gas condensate** reservoir - into **liquid** and **gas** phases for export from an offshore platform
Patent Assignee: CHEVRON RES & TECHNOLOGY CO (CALI)
Inventor: HODSON J E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5502266	A	19960326	US 92963143	A	19921019	199618	B

Priority Applications (No Type Date): US 92963143 A 19921019
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5502266	A		6	C07C-007/00	

Abstract (Basic): US 5502266 A

Well **fluids** produced from a **gas condensate** reservoir are separated into a **liquid** phase and a **gas** phase for export from an offshore platform by: (a) flowing the **condensate** fluids from a reservoir to a first stage separator (20); (b) maintaining the separator at 600-1500 psi, temp. between the hydrate formation temp. of the produced fluids and 240 deg; (c) separating into a first gas phase (24) and a first liquid phase (61); (d) cooling the gas phase and removing (at 28) a residual liquid (62) and dehydrating the gas (in tower 30) to **remove** residual **water**; (e) expanding (via turbo expander 34) and cooling the gas to achieve an hydrocarbon **dew-point** pressure that permits a substantially single phase flow; (f) compressing the cooled gas (at 46) and flowing to an export system; (g) combining the liquid phase from (c) and the residual liquid from (d), and flowing the mixture to a second stage separator (64) maintained at 400-600 psig, 80-200 deg; (h) separating into a second gas phase (66) and a second liquid phase (72), dehydrating the gas phase (by drier 68) and flowing it to export; (j) flowing the second liquid to a stabiliser column (80) maintained at 15-50 psi, temp. between 50 at the top and 240 deg at the bottom; (k) **removing** a **liquid** component (92) from the stabiliser to an export system, and removing a gas component (96); and (l) compressing the gas (at 100, 101) for recycle to the first gas phase (via lines 108 and 112 and drier 68).

ADVANTAGE - The method may be adapted to changing conditions and demands, e.g. by changing conditions in the stabiliser column and second stage separator. Pressures in drier (68), knockout drum (88) and line (66) out of separator (64) are all equal, allowing all gases to be combined at **dew-point** separator (40).

Dwg.1/1

28/3,AB/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010130360
WPI Acc No: 1995-031611/199505
Related WPI Acc No: 1994-317927; 1996-210378

XRAM Acc No: C95-014187
Direct reduction of iron oxide containing materials - by two-stage fluid bed treatment and circulation of reduction gas
Patent Assignee: METALLGESELLSCHAFT AG (METG); LURGI METALLURGIE GMBH (LURG-N)
Inventor: BRESSER W; HIRSCH M; HUSAIN R; SAATCI A; HIRSCH W
Number of Countries: 009 Number of Patents: 011
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 630975	A1	19941228	EP 94109230	A	19940615	199505	B
AU 9464795	A	19941222	AU 9464795	A	19940617	199507	
DE 4410093	C1	19950309	DE 4410093	A	19940324	199514	
US 5527379	A	19960618	US 94261257	A	19940617	199630	
US 5560762	A	19961001	US 95385994	A	19950209	199645	
AU 673921	B	19961128	AU 9464795	A	19940617	199704	
US 5603748	A	19970218	US 94261257	A	19940617	199713	
			US 96634737	A	19960418		
AU 9670207	A	19970213	AU 9464795	A	19940617	199715	N
			AU 9670207	A	19961015		
EP 630975	B1	19970723	EP 94109230	A	19940615	199734	
DE 59403432	G	19970828	DE 503432	A	19940615	199740	
			EP 94109230	A	19940615		
AU 687688	B	19980226	AU 9464795	A	19940617	199821	N
			AU 9670207	A	19961015		

Priority Applications (No Type Date): DE 4410093 A 19940324; DE 4320359 A 19930619; DE 4437549 A 19941020; AU 9670207 A 19961015
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 630975	A1	G	13	C21B-013/00	
Designated States (Regional): BE DE DK FR GB NL SE					
DE 4410093	C1		7	C21B-013/14	
US 5527379	A		7	C21B-013/14	
US 5560762	A		10	C21B-013/14	
AU 673921	B			C21B-013/14	Previous Publ. patent AU 9464795
US 5603748	A		8	C21B-013/14	Div ex application US 94261257
					Div ex patent US 5527379
AU 9670207	A			C21B-013/14	Div ex application AU 9464795
EP 630975	B1	G	14	C21B-013/00	
Designated States (Regional): BE DE DK FR GB NL SE					
DE 59403432	G			C21B-013/00	Based on patent EP 630975
AU 687688	B			C21B-013/14	Div ex application AU 9464795
					Previous Publ. patent AU 9670207
AU 9464795	A			C21B-013/14	

Abstract (Basic): EP 630975 A

Direct reduction process for iron oxide containing materials and conversion to Fe3C in a two-stage fluid bed treatment. The first stage in a circulating fluid bed system pre-reduces the greater part of the iron content of the charge, with the hourly solids circulation equal to at least five times the weight of the solids content in the fluid bed reactor. The remaining reduction and the partial or complete Fe3C conversion follows in the second stage in a conventional **fluid** bed. The exhaust **gas** from the circulating **fluid** bed has **water removed** by **condensation**, is augmented by addition of reducing gases, heated to process temperature and used as **fluidising gas** for both **fluid** bed stages. Several process variants are claimed.

USE -Direct reduction of fine particulate iron oxide containing materials.

ADVANTAGE - Improved, economic direct reduction process with conversion to Fe3C.

Dwg.1/2

Abstract (Equivalent): EP 630975 B

A method for the direct reduction of iron oxide-containing substances to sponge iron and carburisation to Fe3C in a fluidised bed with circulation of reduction gas, wherein a) in a first reduction stage the iron oxide-containing substances are charged into the fluidised bed reactor of a circulating fluidised bed system, hot reduction **gas** as **fluidising gas** is introduced into the fluidised bed reactor, preliminary reduction of the iron oxides takes place, the suspension discharged from the fluidised bed reactor is largely freed of solids in the recycling cyclone of the circulating fluidised bed and the solids separated off are returned into the fluidised bed reactor such that within the circulating fluidised bed the circulation of solids per hour is at least five times the weight of solids located in the fluidised bed reactor, b) solids from the first reduction stage in a second reduction stage are passed into a conventional **fluidised** bed, hot reduction **gas** as **fluidising gas** in passed into the conventional fluidised bed, the remaining oxygen is broken down and the iron content is largely converted into Fe3C, the exhaust **gas** from the conventional **fluidised** bed is passed as secondary **gas** into the **fluidised** bed reactor according to (a) and the product containing Fe3C is withdrawn from the conventional fluidised bed, c) the exhaust gas from the recycling cyclone according to (a) is cooled to below the **dew-point** and water is condensed out of the exhaust gas, d) a partial stream of the exhaust gas is removed, e) the remaining partial stream, after fortification by the addition of reducing gas and heating as recycle gas is partly passed as **fluidising gas** into the **fluidised** bed reactor of the first reduction stage according to (a) and partly into the fluidised bed of the second reduction stage according to (b).

Dwg.0/2

Abstract (Equivalent): US 5603748 A

A method of reducing a fine-grain iron oxide comprising the steps of: (a) feeding a fine-grain iron oxide to a preheater and directly preheating the fine-grain iron oxide in the preheater by contact with a combustion gas in a suspension in it, and recovering a preheated fine-grain iron oxide from the suspension in a cyclone; (b) introducing the preheated fine-grain iron oxide into a circulating fluidised bed reactor connected to a recycling cyclone for recirculating particles withdrawn from an upper portion of the circulating fluidised bed reactor and returning the particles to a lower portion of the circulating fluidised bed reactor whereby a partially reduced particulate product is formed in the circulating fluidised bed reactor; (c) feeding the partially reduced particulate product to a horizontally elongated fluidised bed reactor fluidised from below and having a length-to-width ratio of at least 2:1 and provided with a number of transverse overflow weirs over which solids flow, thereby producing a finally reduced product; (d) recovering from the recycle cyclone an exhaust gas and cooling the exhaust gas in indirect heat exchange with a reducing gas consisting predominantly of H2; (e) producing the reducing gas from at least part of the exhaust gas cooled in step (d) by adding hydrogen to it; and (f) heating the reducing gas following step (d) by passing the reducing gas through a fuel-fired reducing gas reheater and supplying hot reducing **gas** as **fluidising gas** to the horizontally elongated fluidised bed reactor and to the circulating bed reactor.

Dwg.1/1

US 5560762 A

A process for the heat treatment of fine-grained iron ore and for the conversion of the heat-treated iron ore to metallic iron, comprising: blending the fine iron ore with at least one binder to produce particles having a particle size of from about 0.1 to 5 mm; drying the particles; heat treating dried particles at a temp. of 700deg. to 1100deg. C.; in a first redn. stage, charging the heat-treated particles into a fluidized bed reactor of a circulating fluidized bed system, introducing hot redn. **gas** into the **fluidized** bed reactor as **fluidizing gas** and forming a gas-solids suspension of the charged particles, preliminary reducing the heat treated particles, discharging the suspension from the fluidized bed reactor and removing solids from the suspension in a recycling cyclone of the circulating fluidized bed system, and returning the solids which have been sepd. off to the fluidized bed reactor such that the solids circulation per hour within the circulating fluidized bed system is at least five times the wt. of solids present in the fluidized bed reactor; passing the solids from the first redn. stage, in a second redn. stage, into a conventional fluidized bed, passing hot redn. **gas** into the conventional **fluidized** bed as **fluidizing gas**, the residual oxygen is broken down and the iron content is largely converted into Fe3C, passing the exhaust **gas** from the conventional **fluidized** bed reactor as sec. **gas** into the **fluidized** bed reactor of the circulating fluidized bed system; withdrawing the Fe3C-contg. prod. from the conventional fluidized bed; cooling the exhaust gas from the recycling cyclone of the circulating fluidized bed system to below the exhaust gas **dew-point** and condensing water out of the exhaust gas; withdrawing a partial stream of the exhaust gas; passing the remaining partial stream, after strengthening by addition of reducing gas and heating as recycle **gas**, partly as **fluidizing gas** into the **fluidized** bed reactor of the first redn. stage and partly into the fluidized bed of the second redn. stageDwg.0/3

US 5527379 A

A process for a direct redn. of iron oxide contg. materials to produce sponge iron and for a carburization to form Fe3C in a fluidized bed supplied with a circulating reducing gas, the process comprising the steps of: (a) in a first reducing stage charging the iron oxide contg. materials into a fluidized bed reactor of a circulating fluidized bed system, supplying hot reducing **gas** as a **fluidizing gas** to the **fluidized** bed reactor, pre-reducing the iron oxides to form reduced iron-contg. solids, treating a suspension discharged from the fluidized bed reactor in a recycle cyclone of the circulating fluidized bed system to remove all reduced iron-contg. solids, and recycling sepd. reduced iron-contg. solids to the fluidized bed reactor in such a manner that the amt. of reduced iron-contg. solids which are circulated per hour in the circulating fluidized bed system is at least five times the wt. of reduced iron-contg. solids contained in the fluidized bed reactor; (b) supplying reduced iron-contg. solids from the first reducing stage in a second reducing stage to a conventional fluidized bed reactor that is not part of a circulating fluidized bed system, supplying hot reducing **gas** as a **fluidizing gas** to the conventional **fluidized** bed reactor, reacting the reduced iron-contg. solids to remove remaining oxygen content and to convert the iron content of it completely to Fe3C, supplying an exhaust **gas** from the conventional **fluidized** bed reactor as a sec. **gas** to the **fluidized** bed reactor of step (a), and withdrawing a prod. which contains Fe3C from the conventional fluidized bed reactor; (c) cooling

the exhaust gas from the recycle cyclone used in step (a) below its dewpoint temp. and condensing **water** from the exhaust **gas**; (d) drawing off a partial stream of the exhaust gas; and (e) replenishing the remaining partial stream by addition of reducing gas to it and reheating the replenished partial stream and using same as a recycle gas, a part of which is supplied as a **fluidizing gas** to the circulating **fluidized** bed reactor of the first reducing stage employed in step (a) and another part of which is supplied to the conventional fluidized bed reactor that is not part of a circulating fluidized bed system of the second reducing stage employed in step (b).

Dwg.0/1

28/3,AB/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

004789726
WPI Acc No: 1986-293067/198645
XRAM Acc No: C86-126955

Insecticide prepn. by reacting oxime or phenol with methyl isocyanate - produced from oxidative dehydrogenation of monomethyl formamide, opt. with partial **removal** of **water vapour** by **condensation**

Patent Assignee: DU PONT DE NEMOURS & CO E I (DUPO)
Inventor: BLAISDELL C T; CORDES W J; HEINSOHN G E; KOOK J F; KOSAK J R
Number of Countries: 017 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 200506	A	19861105	EP 86303168	A	19860425	198645	B
JP 61251651	A	19861108	JP 8693529	A	19860424	198651	
BR 8601803	A	19861223				198710	
US 4698438	A	19871006	US 86827517	A	19860211	198742	
CA 1247113	A	19881220				198904	
IL 78603	A	19890928				199002	
EP 200506	B	19910911				199137	
DE 3681331	G	19911017				199143	
KR 9406766	B1	19940727	KR 863233	A	19860426	199619	

Priority Applications (No Type Date): US 86827517 A 19860211; US 85727812 A 19850426
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 200506	A	E	17		
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
EP 200506	B				
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
KR 9406766	B1			C07C-269/02	

Abstract (Basic): EP 200506 A

Prepn. of an insecticide by reaction of methylisocyanate (MIC) with an oxime or phenol of formula (a)-(h) comprises (a) employing as the source of MIC, the reaction mixt. formed from the oxidative dehydrogenation of monomethylformamide (MMF) which contains MIC and **water** in the **vapour** phase, (b) contacting the MIC and oxime or phenol in a continuous close-coupled process in which either (i) the temp. of the MIC/**water vapour** phase mixt. is maintained at 100-650 deg.C until the time of contact, or (ii) the mixt. is enriched in MIC relative to water by diluting with inert gas and then cooling to

preferentially condense water rather than MIC.

ADVANTAGE - MIC, which is extremely toxic and very reactive, is present only as a transient intermediate and need not be isolated and stored. The total mass of MIC is kept to a minimum by the low residence time and use of a **diluent gas**. MIC yield losses are minimised and when step (ii) is employed high purity prods. free of phytotoxic materials are obtd.

Dwg.0/0

Abstract (Equivalent): EP 200506 B

A process for forming an insecticide by reacting methyl isocyanate with an oxime or phenol selected from the following formula A-H. The process comprising: (i) employing as the source of emthyl isocyanate, the reaction mixture formed from the oxidative dehydrogenation of monomethylformamide, said reaction containing methyl isocyanate and **water** in the **vapour** phase. (ii) contacting the oxime or phenol with the methyl isocyanate described in (i) in a continuous, close-coupled process employing one of steps (iii) or (iv) to prepare the methyl isocyanate for contact with the oxime or phenol, (iii) maintaining the temperature of the methyl isocyanate/**water vapour** phase mixture between about 100-650 deg.C until the time of contact, (iv) enriching the mixture in methyl isocyanate relative to water by diluting with inert gas and cooling the methyl isocyanate/water mixture to a temperature below the **dew point** of the water but above the **dew point** of the methyl isocyanate, condensing a portion of the water and high boiling impurities from step (i), and separating the condensed phase from the methyl isocyanate. (11pp)

Abstract (Equivalent): US 4698438 A

In prepn. of methyl carbamate and thioimidate insecticides by reacting methyl isocyanate with an oxime or phenol of formula (A) -(H), the improvement comprises: (i) using methyl isocyanate obtd. from the reaction mixt. with **water** in the **vapour** phase from the oxidative dehydrogenation of monomethylformamide, (ii) contacting the oxime or phenol with the methyl isocyanate of (i) in a continuous, close-coupled process using one of the steps (iii) or (iv) to prepare the methyl isocyanate for contact with the oxime or phenol, (iii) maintaining the temp. of the methyl isocyanate/ **water vapour** phase mixt. at 100-650 deg.C, until contact, (iv) enriching the mixt. in methyl isocyanate relative to water by diluting with inert gas and coding to pref. condense water rather than methyl isocyanate.

USE/ADVANTAGE - Cpds. are useful as insecticides and this process negates the use of liquid methyl isocyanate which is toxic and highly reactive. (6pp)a

28/3,AB/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

003728281
WPI Acc No: 1983-724477/198331
XRAM Acc No: C83-072307
Water and aromatic cpds. **removed** from **gases** by mixed **solvent** - comprising n-methyl-epsilon-caprolactam, glycol and water
Patent Assignee: SCHLICHT B (SCHL-I); VEB CHEMIEANLAGENBA (LEIP-N)
Inventor: BEISE H; BURK W; GROSS M; LINDNER O; MINAK P; SONNTAG C; WEHNER K
Number of Countries: 009 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week

EP 84319	A	19830727	EP 83100037	A	19830104	198331	B
JP 58160391	A	19830922				198344	
DD 207800	A	19840314				198428	
US 4479811	A	19841030	US 83469832	A	19830228	198446	
EP 84319	B	19860604				198623	
DE 3363833	G	19860710				198629	
RO 89756	A	19860730				198705	

Priority Applications (No Type Date): DD 236847 A 19820119
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 84319	A	G	9		
Designated States (Regional): DE FR GB IT NL					
EP 84319	B	G			
Designated States (Regional): DE FR GB IT NL					

Abstract (Basic): EP 84319 A

Hydrocarbons, esp. aromatics including naphthalene, and **water** are **removed** from **gases** by using a **solvent** comprising a glycol (pref. 79.9-97 wt.%) (e.g. triethylene glycol), N-methyl-epsilon-caprolactam (pref. 2-20 wt.%) and water (pref. 0.1-1 wt.%). The absorption and desorption appts. is conventional.

Used for treating natural and technical gases, including those from coal carbonisation and cracking.

The treated gas has a low **dew point** for water (e.g. below -5 deg.C), and a low temp. for aromatics **condensation.** Investment and running costs are reduced, e.g. w.r.t a combination of glycol and active carbon absorbers. The absorption capacity of the solvent is high, and its regeneration temp. low (150-190, pref. 170 deg.C).

28/3,AB/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

001654465
WPI Acc No: 1976-88921X/197648
Sulphuric acid prodn. from moist sulphur trioxide contg. gases - by direct cooling with aq. sulphuric acid soln.(BE041176)
Patent Assignee: METALLGESELLSCHAFT AG (METG)
Number of Countries: 013 Number of Patents: 015
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 2519928	A	19761118				197648	B
BE 841446	A	19761104				197648	
BR 7602788	A	19761109				197648	
NL 7604134	A	19761109				197648	
SE 7605105	A	19761129				197651	
NO 7601497	A	19761129				197652	
JP 51139597	A	19761130				197703	
FR 2310312	A	19770107				197709	
ZA 7602022	A	19770221				197719	
US 4029751	A	19770614				197725	
GB 1548632	A	19790718				197929	
CA 1059727	A	19790807				197934	
DE 2519928	B	19800724				198031	
IT 1059780	B	19820621				198247	
JP 85008965	B	19850307				198514	

Priority Applications (No Type Date): DE 2519928 A 19750505

Abstract (Basic): DE 2519928 A

Production of H2SO4 from moist SO3-containing gases by direct cooling with an aqueous H2SO4 solution and **condensation** of H2SO4 in gases cooled below the **dew point**, with **removal** of **water** unnecessary for the H2SO4 formation in the form of vapour carried away with existing gas, is improved in that the direct cooling to 120-230 degrees C is effected in concurrent with a 70-95 weight% solution of H2SO4; a major part of the resulting H2SO4 solution is directed to a sump; a part of this solution is recycled after indirect cooling and contacted again with SO3-containing gases, whilst the other part of the H2SO4 solution is withdrawn as a final product. The cooled gases are mixed with cold air and this gas mixture is contacted with dilute H2SO4 solution (5-70 weight%). Water is added to the dilute H2SO4 solution, and a part of it is recycled to the gas-air mixture, whilst the other part is recycled to the 70-95 weight% H2SO4 solution The quantities of the added air and water are such that the gas mixture after the contact with dilute H2SO4 solution has a temperature which would not be harmful for the next part of the appts. The water added to the dilute H2SO4 is partly evaporated. The existing gas is freed from the acid mist in a separator. SO3 is removed effectively even from gases containing a small amount of SO3 and a large quantity of **water vapour**. Highly concentrated H2SO4 **soln**. is obtained (70-95 weight%). The cost is relatively low.

33/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014920008
WPI Acc No: 2002-740715/200280
XRAM Acc No: C02-209692
XRPX Acc No: N02-583613
Exchange of solvent in mixture of water and optionally substituted polythiophene for coating composition, involves contacting heated solvent with mixture to **vaporize** portion of **water**, and exchanging water
Patent Assignee: ELECON INC (ELEC-N); HAGHIGHAT R R (HAGH-I); MOJAZZA H R (MOJA-I); RYU J (RYUJ-I); SCHULER P (SCHU-I); VINCIGUERRA M A (VINC-I); FREITAG D (FREI-I); MULFORT K (MULF-I); ZHOU Q (ZHOU-I)
Inventor: CLENDENING K; HAGHIGHAT R; RYU J; SCHULER P; VINCIGUERA M; HAGHIGHAT R R; MOJAZZA H R; VINCIGUERRA M A; FREITAG D; MULFORT K; ZHOU Q ; MULFORD K
Number of Countries: 101 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200267273	A1	20020829	WO 2002US4679	A	20020215	200280	B
US 20030015691	A1	20030123	US 2001269606	P	20010216	200310	
			US 2001298174	P	20010613		
			US 2001999171	A	20011130		
			US 2002211424	A	20020801		
US 20030006401	A1	20030109	US 2001269606	P	20010216	200311	
			US 2001298174	P	20010613		
			US 2001999171	A	20011130		
US 20030164477	A1	20030904	US 2001269606	P	20010216	200359	
			US 2001298174	P	20010613		
			US 2001999171	A	20011116		
			US 2002167043	A	20020610		
EP 1360701	A1	20031112	EP 2002721021	A	20020215	200377	
			WO 2002US4679	A	20020215		
US 6692662	B2	20040217	US 2001269606	P	20010216	200413	
			US 2001298174	P	20010613		
			US 2001999171	A	20011130		
US 6692663	B2	20040217	US 2001269606	P	20010216	200413	
			US 2001298174	P	20010613		
			US 2001999171	A	20011130		
			US 2002167043	A	20020610		
AU 2002251977	A1	20020904	AU 2002251977	A	20020215	200427	
KR 2004030507	A	20040409	KR 2003710788	A	20030816	200453	

Priority Applications (No Type Date): US 2001999171 A 20011130; US 2001269606 P 20010216; US 2001298174 P 20010613; US 2002211424 A 20020801 ; US 2002167043 A 20020610
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200267273	A1	E	92	H01B-001/12	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

US 20030015691 A1 H01B-001/00 Provisional application US 2001269606

			Provisional application US 2001298174 Div ex application US 2001999171
US 20030006401	A1	H01C-001/00	Provisional application US 2001269606
US 20030164477	A1	H01C-001/00	Provisional application US 2001298174 Provisional application US 2001269606
			Provisional application US 2001298174 CIP of application US 2001999171
EP 1360701	A1 E	H01B-001/12	Based on patent WO 200267273
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR			
US 6692662	B2	H01B-001/12	Provisional application US 2001269606 Provisional application US 2001298174
US 6692663	B2	H01B-001/12	Provisional application US 2001269606 Provisional application US 2001298174 CIP of application US 2001999171
AU 2002251977	A1	H01B-001/12	Based on patent WO 200267273
KR 2004030507	A	H01B-001/12	

Abstract (Basic): WO 200267273 A1

Abstract (Basic):

NOVELTY - Solvent(s) is heated in a vessel under conditions suitable for **vaporizing water**. The heated **solvent** is contacted with a mixture comprising water and optionally substituted polythiophene, to remove at least a portion of the water from the mixture as **vapor**. The **water removed** from the mixture is exchanged with the solvent.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) A composition formed by exchanging solvent in mixture of water and optionally substituted polythiophene;

(2) A conducting coating which has a layer comprising the composition and having a specific resistance of 10-1012 ohm/sq;

(3) A conductive film which comprises the composition and polymer, copolymer and/or graft polymer;

(4) An article comprising the composition, coating or film;

(5) Manufacture of an electronic implementation which comprises contacting composition, coating and/or film with a first polymer layer, dissolving a portion of the first polymer layer with the composition under conditions forming a hole in the first polymer layer and evaporating the solvent in the composition;

(6) Electronic implementation;

(7) Article comprising electronic implementation;

(8) Optically transparent and electrically conductive polymeric coatings which are fabricated using organic solvent based conductive polymers of poly(ethylenedioxythiophene), and poly(styrene sulfonic acid) of which environmental stability, low water content, low water affinity and flexibility are important consideration for electro-optic device applications;

(9) Fabrication of conductive polymeric coatings which involves producing coatings by employing controlled drying process of air dry for 1 hour at ambient temperatures followed by oven dry at 80degreesC for 5 minutes to improve electrical conductivity without degrading optical transmission;

(10) Electro-optic devices manufactured utilizing conductive coatings;

(11) Article comprising electro-optic implementation; and

(12) An organic light emitting device comprising metal cathode, electron transport layer, organic emitter, hole injection layer and/or

glass substrate layer.

USE - For exchanging solvent such as dimethylacetamide, N-methylpyrrolidone or ethylene glycol in a mixture comprising water and an optionally substituted polythiophene such as poly-3,4-ethylene dioxythiophene, used to prepare a composition of polythiophene and solvent. The composition is used to form a conductive coating, a conductive film for forming electronic implementation, electro-optic devices such as an organic light emitting device and articles such as antiradiation coating, antistatic coating, battery, catalyst, deicer panel, electrochromic window, electrochromic display, electromagnetic shielding, electromechanical actuator, electronic membrane, embedded array antenna, fuel cell, junction device, lithographic resist, non-corrosive paint, non-linear optical device, conductive paint, polymer electrolyte, radar dish, redox capacitor, sealant, semiconductor circuit, sensor, smart window, telecom device, waveguide and wire. The electromechanical actuator is biomedical device, micropositioner, microsorter, microtweezer, or microvalve. The sensor is biological, chemical, electrochemical, irradiation dosage, mechanical shock, temperature, temperature limit or time-temperature sensor. Article comprising electronic implementation is liquid crystal display, electrophoretic ink display, polymer disperse liquid crystal or identification tag which is smart label for use in customer good such as a toy or supermarket item (all claimed).

ADVANTAGE - Portion or whole of water in the mixture is exchanged as needed using standard laboratory equipment in a cost effective manner. The composition comprising optionally substituted polythiophene and non- or low toxicity exchanged solvent is easy to make and use. The composition has good conductivity, high optical transparency and environmental stability and can be used to replace indium doped tin oxide coated glass substrates that are part of many standard optical light emitting devices. The light emitting devices reduce or avoid use of hard-to-manipulate indium tin oxide components. The converted thiophene mixtures improved stability to air and **moisture**.

DESCRIPTION OF DRAWING(S) - The figure shows the graph of optical transmission versus surface resistance of a solvent exchanged triton AO resistant conductive polymer made from solvent exchanged Baytron.

pp; 92 DwgNo 1/17

33/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014213721
WPI Acc No: 2002-034419/200204
Related WPI Acc No: 2001-648971; 2002-011222; 2002-017712; 2002-017713;
2002-017714; 2002-017715; 2002-017716; 2002-026174; 2002-026274;
2002-026277; 2002-062257; 2002-267605; 2002-361205; 2002-425018;
2002-425019; 2002-425131; 2002-425269; 2002-425270; 2002-425271;
2002-425272; 2002-425308; 2002-425325; 2002-425348; 2002-433953;
2002-433954; 2002-433955; 2002-442917; 2002-443033; 2002-443034;
2002-443323; 2002-443411; 2002-453510; 2002-462626; 2002-462667;
2002-478723; 2002-478855; 2002-488664; 2002-488683; 2002-488689;
2002-488825; 2002-498950; 2002-499121; 2002-507184; 2002-526656;
2002-526662; 2002-526663; 2002-536469; 2002-536470; 2002-536473;
2002-536493; 2002-546473; 2002-546552; 2002-556416; 2002-556417;
2002-556440; 2002-556441; 2002-556442; 2002-556443; 2002-556477;
2002-556486; 2002-556487; 2002-556488; 2002-556614; 2002-565615;
2002-565631; 2002-573643; 2002-573644; 2002-582216; 2002-589135;
2002-626390; 2002-642051; 2002-705764; 2002-730939; 2002-741241;

2002-750833; 2003-045812; 2003-045937; 2003-090588; 2003-174008; 2003-247687; 2003-340818; 2003-354033; 2003-391555; 2003-416423; 2003-456902; 2003-456904; 2003-481056; 2003-492660; 2003-492839; 2003-531449; 2003-554765; 2003-576140; 2003-778317; 2003-778318; 2003-786795; 2003-851506; 2004-041710; 2004-068762; 2004-224251

XRAM Acc No: C02-009631

In situ treatment of coal formation, for production of hydrocarbons, hydrogen and/or other products, involves heating selected part of formation with controlled heat to produce mixture from formation

Patent Assignee: SHELL OIL CO (SHEL)

Inventor: BAXLEY P T; BERCHENKO I E; BIELAMOWICZ L J; CARL F G; COLES J M; FOWLER T D; HUNSUCKER B G; KARANIKAS J M; KEEDY C R; MADGAVKAR A M; MAHER K A; MARTIN VAN HARDEVELD R; MENOTTI J L; PIERRE DE ROUFIGNAC E; RYAN R C ; SCHOELING L; SHAHIN G T; STEGEMEIER G L; SUMNU-DINDORUK M D; VINEGAR H J; WARD J M; WELLINGTON S L; ZHANG E

Number of Countries: 093 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200181240	A2	20011101	WO 2001US13538	A	20010424	200204 B
AU 200159183	A	20011107	AU 200159183	A	20010424	200219

Priority Applications (No Type Date): US 2000199215 P 20000424; US 2000199213 P 20000424; US 2000199214 P 20000424

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200181240	A2	E	569	C01B-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200159183	A				Based on patent WO 200181240

Abstract (Basic): WO 200181240 A2

Abstract (Basic):

NOVELTY - In situ treatment of coal formation involves transferring heat from one or more source to at least one selected part of the formation. The heat source is controlled such that the average temperature within much of the selected part of the formation is less than 375degreesC. A mixture is hence produced from the formation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for;

(1) Method of treating coal formation in situ by heating to oxidize hydrocarbons by flowing an oxidant through a conduit within the wellbore, reacting oxidant an hydrocarbon to generate heat that is used to pyrolyze part of hydrocarbons in pyrolysis zone;

(2) In situ production of hydrogen from a coal formation by heating the formation to produce a mixture with a hydrogen partial pressure greater than 0.5 bar;

(3) A method for forming heater wells in a coal formation, by forming a second wellbore using magnetic tracking, such that it is parallel to the first. At least one heater source is placed in each bore, to provide heat to at least part of the formation;

(4) A method of installing a heater well into a coal formation by drilling a bore using a steerable motor and an accelerometer;

(5) A system for heating a coal formation, comprising a heater, an oxidizing fluid source and a conduit to deliver the fluid to a reaction zone in the formation;

(6) A mixture produced from a section of a coal formation, comprising less than 10 wt.% olefin and an average carbon number of

less than 35;

(7) Production of synthesis gas from a coal formation;

(8) A method of sequestering carbon dioxide within a coal formation by heating part of the formation to increase permeability, allowing it to cool and storing carbon dioxide within the section; and

(9) Production of ammonia from a coal formation by separating air into oxygen- and nitrogen-rich streams, heating the formation to produce synthesis gas from reaction between a **gas** generating **fluid** and the oxygen stream, separating into hydrogen and carbon dioxide, and forming ammonia from reaction of the nitrogen and hydrogen streams.

USE - For production of hydrocarbons, hydrogen and/or other products from coal formations.

ADVANTAGE - Concerns over depletion of available hydrocarbon resources have led to development for processes for more efficient recovery, processing and/or their use. Combusting a fuel, or oxidizing, to heat a formation may be more efficient than using solely electricity, since the electrical heaters can be selectively used. A significant number of coal formations are not suitable for economical mining, such as from steeply dipping coal seams, relatively thin coal seams less than 1m thick, and deep coal seams. In these cases, the electricity obtained from burning the mined coal is not as efficient as that obtained from other fuels. Further, coal combustion results in carbon, sulfur and nitrogen oxides being released to the atmosphere. In situ production of other products, such as synthesis gas, eliminates the expense of building, operating and maintaining a surface production facility. Sequestering fluid, resulting from various stages of the in situ process, in the underground formation, reduces the amount vented to the atmosphere as in previous processes. Temperature and pressure can be controlled during pyrolysis to yield improved and selected products from the formation. Controlling the heating of the formation can inhibit production of less desirable components. Similarly, a reducing agent can be used to the same effect. The positioning of heating sources can be designed to optimize heating for a section of the formation, thus allowing for a greater area of hydrocarbons for pyrolysis to increase the economic viability of in situ conversion. Cooling the formation can improve the strength of the rock in the formation, to prevent subsidence, and increase the absorptive capacity of the formation.

DESCRIPTION OF DRAWING(S) - The drawing shows heater wells in a coal formation.

steeply dipping coal formation (200)
heater well (202)
production well (206)
pp; 569 DwgNo 4/135

33/3,AB/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014190525
WPI Acc No: 2002-011222/200201
Related WPI Acc No: 2001-648971; 2002-017712; 2002-017713; 2002-017714; 2002-017715; 2002-017716; 2002-026174; 2002-026274; 2002-026277; 2002-034419; 2002-062257; 2002-267605; 2002-361205; 2002-425018; 2002-425019; 2002-425131; 2002-425269; 2002-425270; 2002-425271; 2002-425272; 2002-425308; 2002-425325; 2002-425348; 2002-433953; 2002-433954; 2002-433955; 2002-442917; 2002-443033; 2002-443034; 2002-443323; 2002-443411; 2002-453510; 2002-462626; 2002-462667;

pp; 682 DwgNo 4/182

33/3,AB/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012039994
WPI Acc No: 1998-456904/199839
XRAM Acc No: C98-138134
Removing entrained and dissolved **liquid** in **gas** or air from gas or air - with efficiency of **liquid** separation from **gas** directly dependent on amount of sand contained in gravel bed
Patent Assignee: MCKENZIE R J (MCKE-I); PARKER I S (PARK-I); HYDRO PACIFIC TECHNOLOGIES INC (HYDR-N)
Inventor: MCKENZIE R J; PARKER I S
Number of Countries: 070 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9835744	A1	19980820	WO 97CA107	A	19970214	199839	B
AU 9717145	A	19980908	AU 9717145	A	19970214	199904	
			WO 97CA107	A	19970214		
MX 9907495	A1	19991101	MX 997495	A	19990813	200106	

Priority Applications (No Type Date): WO 97CA107 A 19970214
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9835744	A1	E	17	B01D-046/30	

Designated States (National): AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG

AU 9717145	A		B01D-046/30	Based on patent WO 9835744
MX 9907495	A1		B01D-046/30	

Abstract (Basic): WO 9835744 A

Apparatus for **removing liquid** entrained and **dissolved** in **gas** from the gas, the apparatus having a housing (70) with a gas inlet (78), a gas outlet (90) and a fluid outlet (92), comprises (a) a distributor (82) proximate the gas inlet (78); (b) a bed (74) in the housing (70) containing a network of channels bounded by solid material having sharp protruberances, so as to cause the liquid entrained and **dissolved** in the **gas** to condense without absorbing the liquid, the distributor (82) operative to disperse gas coming from the gas inlet (78) over an inlet end of the bed (74); and (c) a collector (87) proximate an outlet region of the bed (74) operative to **collect** the **liquid** that has condensed in the bed and direct the gas which emerges from the bed (74) away from the bed to the gas outlet (90).

Also claimed are: (i) apparatus for separating from **gas** and **collecting liquid** which has become dissolved and entrained in the gas; and (ii) a method of **removing liquid** entrained and **dissolved** in **gas** from the gas.

USE - **Removing** entrained and **dissolved liquid** in **gas** or air from gas or air.

ADVANTAGE - The efficiency of **liquid** separation from **gas** is directly dependent on the amount of sand contained in the gravel bed, so that, for example, with natural gas, sand lowers the **moisture** content of the gas from 7 to under 2, pounds per million

cubic feet when no sand is used to where a significant amount of sand is used, whilst other arrangements also work; importantly, the bed has to contain a network of channels bounded by solid material having sharp protruberances, in which no significant cooling of the gas from inlet to outlet is required to achieve **condensation**.

Dwg.1/1

33/3,AB/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010012165
WPI Acc No: 1994-279877/199434
Related WPI Acc No: 1994-164698; 1995-168050; 1996-178113; 2001-326997
XRPX Acc No: N94-220439

Device for cooling hot fluids - uses closed circuit secondary organic cooling **fluids** and expands **vaporised** organic **fluid** through turbines to **move** condenser air

Patent Assignee: ORMAT IND LTD (ORMA-N); ORMAT INC (ORMA-N); AMIR N (AMIR-I); BRONICKI L Y (BRON-I); SINAI J (SINA-I)
Inventor: AMIR N; BRONICKI L Y; GRASSIANNI M; GILON Y; SINAI J; ELOVIC A; MORITZ A; RIOLLET G; BRONICKI L; GRASSIANI M
Number of Countries: 013 Number of Patents: 017
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9418515	A1	19940818	WO 94US2101	A	19940214	199434	B
US 5437157	A	19950801	US 89444565	A	19890701	199536	
			US 91658303	A	19910220		
			US 91730526	A	19910715		
			US 92952156	A	19920928		
			US 92955454	A	19921002		
			US 92955686	A	19921002		
			US 92989918	A	19921211		
			US 9317302	A	19930212		
GB 2290610	A	19960103	WO 94US2101	A	19940214	199604	
			GB 9516604	A	19950811		
NZ 248729	A	19960326	NZ 248729	A	19930921	199618	N
NZ 248730	A	19960326	NZ 248730	A	19930921	199618	N
US 5526646	A	19960618	US 89444565	A	19891201	199630	N
			US 91658303	A	19910220		
			US 91730526	A	19910715		
			US 92952156	A	19920928		
			US 92955454	A	19921002		
			US 92955686	A	19921002		
			US 92989918	A	19921211		
			US 9341654	A	19930401		
			US 94279549	A	19940725		
IL 107116	A	19960804	IL 107116	A	19930927	199646	N
GB 2290610	B	19970402	WO 94US2101	A	19940214	199717	
			GB 9516604	A	19950811		
CN 1097239	A	19950111	CN 93114152	A	19930930	199719	N
CN 1097240	A	19950111	CN 93114143	A	19930930	199719	N
US 5671601	A	19970930	US 92955686	A	19921002	199745	N
			US 93124792	A	19930922		
			US 94329781	A	19941027		
US 5860279	A	19990119	WO 94US2101	A	19940214	199911	
			US 95501031	A	19950920		
US 5970714	A	19991026	US 92955454	A	19921002	199952	N
			US 94261048	A	19940614		

			US 96689846	A	19960814			
RU 2121118	C1	19981027	RU 9356195	A	19931001	200012	N	
RU 2126098	C1	19990210	RU 9356197	A	19931001	200021	N	
MX 189716	B	19980825	MX 936129	A	19931001	200037	N	
JP 3391515	B2	20030331	JP 93247762	A	19931004	200325	N	

Priority Applications (No Type Date): US 9317302 A 19930212; US 89444565 A 19890701; US 91658303 A 19910220; US 91730526 A 19910715; US 92952156 A 19920928; US 92955454 A 19921002; US 92955686 A 19921002; US 92989918 A 19921211; NZ 248729 A 19930921; NZ 248730 A 19930921; US 94279549 A 19940725; IL 107116 A 19930927; CN 93114152 A 19930930; CN 93114143 A 19930930; US 94329781 A 19941027; US 95501031 A 19950920; US 96689846 A 19960814; RU 9356195 A 19931001; RU 9356197 A 19931001; MX 936129 A 19931001; JP 93247762 A 19931004

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9418515	A1	E	42	F28B-011/00	
Designated States (National): BR CA CN GB NZ PL RU SE UA US					
US 5437157	A		7	F01K-023/04	Cont of application US 89444565 Cont of application US 91658303 Cont of application US 91730526 Cont of application US 92952156 CIP of application US 92955454 CIP of application US 92955686 CIP of application US 92989918
GB 2290610	A		1	F25D-031/00	Based on patent WO 9418515
NZ 248729	A			F03G-004/06	
NZ 248730	A			F03G-004/06	
US 5526646	A		7	F03G-007/00	Cont of application US 89444565 Cont of application US 91658303 Cont of application US 91730526 CIP of application US 92952156 Cont of application US 92955454 Cont of application US 92955686 Cont of application US 92989918 Cont of application US 9341654
IL 107116	A			F03G-004/00	
GB 2290610	B			F25D-031/00	Based on patent WO 9418515
CN 1097239	A			F03G-004/00	
CN 1097240	A			F03G-004/02	
US 5671601	A		10	F03G-007/00	Cont of application US 92955686 Cont of application US 93124792
US 5860279	A			F01K-023/04	Based on patent WO 9418515
US 5970714	A			F03G-007/00	Cont of application US 92955454 Cont of application US 94261048
RU 2121118	C1			F24J-003/08	
RU 2126098	C1			F03G-004/06	
MX 189716	B			F03G-007/000	
JP 3391515	B2		8	F03G-004/00	Previous Publ. patent JP 6341368

Abstract (Basic): WO 9418515 A

A heated fluid(14) is cooled(15) in a heat exchanger to vaporise a secondary organic cooling fluid(17). This fluid(17) is expanded through a turbine(12) to directly drive a fan(18) blowing air over a condenser(13).

The heat depleted organic fluid(20) is condensed in the condenser to a fluid(21). This flows by gravity return to the heat exchanger(16) for recycling.

USE/ADVANTAGE - A self regulating cooling system which rejects only heat to atmosphere and is only subject to fouling on the outside of the

condenser tubes and does not require an external power supply.

Dwg.1/5

Abstract (Equivalent): GB 2290610 B

Apparatus for cooling a hot fluid, comprising: (a) a heat exchanger adapted to receive hot fluid and liquid coolant, for cooling the hot **fluid** and **vaporising** the **liquid** coolant; (b) a turbine having an output shaft connected to a fan, and responsive to vaporised coolant for driving the fan to blow air, and producing vaporised coolant which exits the turbine; (c) a condenser for receiving vaporised coolant that exits the turbine, and responsive to air blown by the fan for condensing the vaporised coolant received in the condenser into **coolant condensate**, and (d) means for returning the **coolant condensate** to the heat exchanger.

Dwg.1

Abstract (Equivalent): US 5671601 A

A method for producing power from geothermal fluid comprising the steps of:

(a) producing steam using said geothermal fluid;

(b) providing a high pressure steam turbine for producing power from steam produced from said geothermal fluid;

(c) separating **moisture** from heat depleted steam exiting said steam turbine for producing dried heat depleted steam and liquid;

(d) draining said liquid into a chamber for **collecting** said **liquid**;

(e) supplying further liquid to said chamber, the temperature of the further liquid being higher than the temperature of liquid draining into said chamber; and

(f) flashing liquid in said chamber for producing steam and supplying it together with said dried heat depleted steam to the inlet of a further steam turbine for producing power and further heat depleted steam.

Dwg.2/4

US 5526646 A

Apparatus for producing work from a source of geothermal fluid that contains a mixture of high pressure steam, brine, and non-condensable gases, said apparatus comprising:

(a) a heat exchanger for receiving said geothermal fluid and transferring heat to **water** thereby **vaporizing** the same to produce steam;

(b) at least one power plant module having a steam turbine responsive to said steam for expanding the steam, and producing work and low pressure steam, a steam condenser containing an organic fluid and responsive to said low pressure steam for condensing the same to **liquid** and for **vaporizing** the organic **fluid** and an organic **vapor** turbine responsive to **vaporized** organic **fluid** for producing work and low pressure organic **fluid**, and an organic **vapor** condenser responsive to low pressure organic fluid for condensing the same to a liquid that is returned to said steam condenser;

(c) means for returning liquid produced by said steam condenser to said heat exchanger;

(d) means for conducting geothermal fluid leaving said heat exchanger to an injection well;

(e) an additional heat exchanger; and

(f) first connection means associated with both of the heat exchangers for selectively inserting said additional heat exchanger between the heat exchanger that receives said geothermal fluid and the injection well whereby the flow of geothermal fluid can be divided selectively between both heat exchangers in accordance with the level of operation of said power plant modules.

(Dwg.1/3

33/3,AB/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007550464
WPI Acc No: 1988-184396/198827
XRPX Acc No: N88-140894
Lignite drying system with fluidised bed - uses extracted **vapour** as **fluidisation** and heating media
Patent Assignee: RHEINBRAUN AG (UNIR); UNION RHEIN BRAUNKOHLEN (UNIR)
Inventor: KLUTZ H; KLUTZ H J
Number of Countries: 008 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 273406	A	19880706	EP 87119180	A	19871224	198827 B
AU 8783132	A	19880707				198841
FI 8705748	A	19880701				198842
DE 3724960	A	19890209	DE 3724960	A	19870728	198907
DD 266636	A	19890405				198936
CS 8709691	A	19900712				199037
EP 273406	B1	19930331	EP 87119180	A	19871224	199313
DE 3785165	G	19930506	DE 3785165	A	19871224	199319
			EP 87119180	A	19871224	

Priority Applications (No Type Date): DE 3724960 A 19870728; DE 3644806 A 19861231
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 273406	A	G	7		
Designated States (Regional): AT DE GB GR					
EP 273406	B1	G	7	F26B-003/08	
Designated States (Regional): AT DE GB GR					
DE 3785165	G			F26B-003/08	Based on patent EP 273406

Abstract (Basic): EP 273406 A

Moist, partic. fine granular material is dried in a fluidised bed, contg. heat exchange inserts through which a heating medium flows, with which the material is brought into contact. The **water vapour** extracted is **discharged** from the drier, with dust extracted from it if desired.

Part of the vapour, from which dust has been separated, is returned to the drier as a fluidisation medium, while another part is compressed and passed as a heating agent through the heat exchanger, where it is condensed and passed via an automatic condenser into an expansion vessel. The steam generated is passed into the compressed vapour, and the **condensate** used to preheat the material.

USE/ADVANTAGE - For raw brown coal etc., with a low level of power consumption and reduced environmental pollution.

0/1

Abstract (Equivalent): EP 273406 B

A process for drying at least pre-broken rough lignite in a fluidised bed drier having heat exchanger installation members through which flows a heating medium and which are contacted by the rough lignite under the action of a fluidisation agent for the purposes of heat transfer, wherein at least a part of the **water** is **removed** from the rough lignite and discharged in the form of vapours from the drier and dust is removed from the vapours and a

portion of the vapours from which dust has been removed is returned as a fluidisation agent into the fluidised bed drier and another portion of the vapours from which dust has been removed is compressed and passed as a heating medium through the heat exchanger installation members and is condensed therein and at least a part of the **condensate** is used for preheating of the lignite to be dried, characterised in that the **condensate** is passed for the purposes of pressure reduction by way of a condensomat into a pressure relief vessel and at least a part of the vapour which is produced in that situation is introduced into the vapour flow portion to be compressed and a part of the **condensate** is injected into the heating medium under pressure downstream of the compressor or between the individual compressor stages to avoid overheating of the compressed vapours and a part of the **condensate** is injected into the heat exchanger installation members under pressure for internal cleaning at at least one location.

(Dwg.1/1

33/3,AB/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007444914
WPI Acc No: 1988-078848/198812
XRAM Acc No: C88-035294
XRPX Acc No: N88-059872
Separate treatment of **water** and **solvent vapours** - in waste air by molecular sieves
Patent Assignee: OEKO-TECH O & CO GM (OEKO-N); OTTO OEKO-TECH GMBH (OTTC) ; OTTO OEKO-TECH GMBH (OTTO-N)
Inventor: GOLDE E; MATHEWS W; SCHWEITZER S
Number of Countries: 009 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 260481	A	19880323	EP 87112265	A	19870824	198812	B
AU 8778321	A	19880324				198820	
JP 63147517	A	19880620	JP 87229944	A	19870916	198830	
ZA 8706348	A	19880511	ZA 876348	A	19870826	198834	
CN 8706299	A	19880413				198922	
US 4846852	A	19890711	US 8796675	A	19870914	198935	
EP 260481	B	19910417				199116	
ES 2022231	B	19911201				199202	

Priority Applications (No Type Date): EP 86112786 A 19860916; EP 87112265 A 19870824
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 260481	A	G	5		
Designated States (Regional): BE ES GR IT					
US 4846852	A		5		
EP 260481	B				
Designated States (Regional): BE ES GR IT					

Abstract (Basic): EP 260481 A

Exhaust air which contains **water** vapour and also **vapour** from **solvents** is passed through a first molecular sieve, e.g. of zeolite pellets, to adsorb **water vapour**, and then through a second such sieve for adsorbing the solvent. Thermal regeneration by hot air/inert gas is then applied separately at appropriate temp. to both sieve units. **Moisture** from the regenerated first sieve is

discharged directly into the atmos., while regenerating gas for the second sieve travels in a closed circuit including a heat exchanger which condenses the **solvent vapour** into a re-usable prod. A pair of parallel molecular sieve packings may operate in alternating adsorption and desorption phases.

USE/ADVANTAGE - Used for treating waste air from dry-cleaning machines, metal degreasing tanks, electronic circuit boards, cleaning baths, etc. Water-free solvent is recovered, and atmos. pollution minimised.

1/1

Abstract (Equivalent): EP 260481 B

Process for separating and recovering volatile solvents from steam-containing exhaust air from dry-cleaning machines, metal-degreasing installations, installations for cleaning electronic printed circuit boards, solvent baths and similar installations, in which the exhaust air is conducted through molecular sieves, which can be regenerated, and is then emitted into the atmosphere, whereby the exhaust air first of all is conducted through a molecular sieve packing absorbing exclusively the **solvent vapours**, and the two molecular sieve packings are regenerated independently of one another through heating by means of air or inert gas, characterised in that the molecular sieve packing absorbing steam exclusively is regenerated towards the atmosphere, the molecular sieve packing absorbing **solvent vapours** exclusively is regenerated in a closed circuit, and in that the **solvent vapours** are condensed and collected within the closed circuit at a **condensation** heat exchanger and returned for re-use. (7pp)

Abstract (Equivalent): US 4846852 A

Method comprises 1) providing a pair of beds of molecular sieve capable of adsorbing the **water vapour** and **solvent vapours** in exhaust air, 2) passing the air through a first pair of beds to adsorb the **water vapour**, resulting in a **water-vapour** free air, 3) passing the **water vapour** free air through a first pair of beds to adsorb the **solvent vapours**, 4) discontinuing step 2), 5) passing the air through a second pair of beds to adsorb the **water vapour**, 6) simultaneously with step 5) passing heated air or inert gas through first pair of beds in a direction opposite to the direction as in step 2) to **remove water** adsorbed on the molecular sieve packing, 7) discontinuing step 3), 8) passing **water vapour** free air through a second pair of beds to adsorb the **solvent vapours** 9) simultaneously with step 8) passing heated air through first pair or beds provided in step 1) in a direction opposite to the direction as in step 1) to remove solvent adsorbed on the sieve packings, 10) discontinuing step 5) and repeating step 2), 11) simultaneously with step 10) passing heated air through second pair of beds in a direction opposite to that of step 1) to **remove water** adsorbed on the sieve packings, 12) discontinuing step 8) and repeating step 3), and 13) simultaneously with step 12) passing heated air through second pair of beds provided in step 1) in a direction opposite to that in step 1) to remove the **solvent vapour** adsorbed on the sieve packings.

(5pp

33/3,AB/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

003844228

WPI Acc No: 1983-840478/198350
XRPX Acc No: N83-221618
Heat recovery from **moist** combustion prod. gas - has water condensed in heat exchanger and concentrated solution reflexed with non-concentrated solution
Patent Assignee: SCANDIACONSULT AB (SCAN-N); SVEDBERG G AB (SVED-N)
Inventor: SVEDBERG U G
Number of Countries: 006 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 96019	A	19831207	EP 83850136	A	19830519	198350	B
SE 8203308	A	19840116				198405	
FI 8301825	A	19840131				198411	
EP 96019	B	19860827				198635	
DE 3365609	G	19861002				198641	
SE 450688	B	19870720				198731	

Priority Applications (No Type Date): SE 823308 A 19820527
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 96019	A	E	18		
Designated States (Regional): AT DE FR GB					
EP 96019	B	E			
Designated States (Regional): AT DE GB					

Abstract (Basic): EP 96019 A
The hot **moist** gas, recovered e.g. from a conventional combustion plant, is brought into direct contact with a hygroscopic **soln.** at a **water vapour** pressure falling below that of the **gas**. The **water vapour moves** from the **gas** to the **solution** at a certain lowering of the gas temp. A partial flow of the solution is concentrated by evaporation of **water vapour**.
The heat of **condensation** of the **water vapour** is transferred by heat exchange (33) before the concentrated solution (21) is refluxed together with the non-concentrated solution. This dissipates further heat via an exchanger for use. The mixed solution is then returned into contact with **moist** gas (15,17).
1/3

33/3,AB/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

003472403
WPI Acc No: 1982-20369E/198211
Drying chamber which uses latent heat of evaporation - by compressing chamber gas or vapours and passing them to chamber heat exchanger
Patent Assignee: BRADSHAW W (BRAD-I)
Inventor: BRADSHAW W
Number of Countries: 015 Number of Patents: 011
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2083190	A	19820317	GB 8123999	A	19810806	198211	B
EP 88174	A	19830914	EP 82301153	A	19820308	198338	
DD 202205	A	19830831				198401	
ES 8308044	A	19831101				198406	
ES 8307044	A	19831001				198407	
GB 2083190	B	19840711				198428	

CA 1180181	A	19850102				198506
US 4644664	A	19870224	US 82357710	A	19820312	198710
EP 88174	B	19870616				198724
DE 3276593	G	19870723				198730
IT 1157776	B	19870218				198910

Priority Applications (No Type Date): GB 8025599 A 19800806; GB 8123999 A 19810806; EP 82301153 A 19820308; US 82357710 A 19820312

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2083190	A		27		
EP 88174	A	E			
Designated States (Regional): AT BE CH DE FR IT LI LU NL SE					
EP 88174	B	E			
Designated States (Regional): AT BE CH DE FR IT LI LU NL SE					

Abstract (Basic): GB 2083190 A

Drying chamber includes a heat exchanger for heating **moisture** - containing material therein, the gas or vapour given off by the material being extracted from the chamber and compressed. The compressed gas or vapour is then passed through the heat exchanger so that the latent heat of evaporation of the gas or vapour is used to heat and dry the material.

Useful for drying flexible sheet material e.g. fabric or paper, particulate material such as foodstuffs e.g. grain, soya flour or coffee, and the **removal** of **moisture** from **fluids**.

Improved thermal efficiency is achieved thereby reducing energy consumption.

Abstract (Equivalent): EP 88174 B

A method of generating vapour in a drying process, the process including drying **moisture**-containing material located in a fluid bed drying chamber, the material in the fluid bed being subjected to heat emitted by a heat exchanger (12) located in the **fluid** bed so that **vapour** is given off by the material, at least some of the vapour given off the material being dried being compressed in a compression system (18), part of the vapour from the compression system being passed through the heat exchanger so that part of the latent heat of evaporation of the vapour at the increased pressure is used to create the necessary temperature gradient between the heat exchanger (12) and the material to be dried within the drying chamber (10) to cause the heat emission for drying the material, and part of the vapour leaving the compression system being supplied to the chamber to cause fluidisation of the material in the fluid bed, characterised in that: hot water **condensate** is injected into the suction side of the compressor of the compression system for producing additional vapour to create in the drying chamber an internal pressure greater than that existing on the outside of the drying chamber in order to prevent air from entering the chamber, and vapour which has left the heat exchanger is recycled back through the compression system. (10pp)

Abstract (Equivalent): GB 2083190 B

Drying chamber includes a heat exchanger for heating **moisture** - containing material therein, the gas or vapour given off by the material being extracted from the chamber and compressed. The compressed gas or vapour is then passed through the heat exchanger so that the latent heat of evaporation of the gas or vapour is used to heat and dry the material.

Useful for drying flexible sheet material e.g. fabric or paper, particulate material such as foodstuffs e.g. grain, soya flour or coffee, and the **removal** of **moisture** from **fluids**.

Improved thermal efficiency is achieved thereby reducing energy consumption. (27pp)

Abstract (Equivalent): US 4644664 A

Fluidised-bed drying process and appts., employs heat exchanger and compressor, vapour given off by the material being dried being at least in part dried and compressed by the compressor. Hot water **condensate** injected into the compressor suction side provides a pressure atmos. in the drying chamber to prevent air ingress, and some vapour from the compressor is passed through the heat exchanger and some **fluidises** the bed. **Vapour** leaving the heat exchanger is recycled to the compressor.

USE/ADVANTAGE - Fabric, paper, granular material such as grain, coffee, dried with maximum economy. (19pp

33/3,AB/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

003340579
WPI Acc No: 1982-J8597E/198230
Solar heating unit with **collector** in **water** circuit - has flow control and distribution in **collector** to limit **water** amount present
Patent Assignee: STUDIECENT KERNENER (CENN)
Inventor: KINNAER L; VANDEPLAS P
Number of Countries: 015 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
BE 892528	A	19820716				198230	B
EP 89093	A	19830921	EP 83200855	A	19830314	198339	
PT 76386	A	19840315				198416	
ES 8501516	A	19850216				198521	
US 4566430	A	19860128	US 83476127	A	19830317	198607	
CA 1210289	A	19860826				198639	
EP 89093	B	19861210				198650	
DE 3368320	G	19870122	DE 3309252	A	19830315	198704	
DE 3309252	C	19870423				198716	

Priority Applications (No Type Date): BE 892528 A 19820317; BE 59631 A 19820317; BE 59632 A 19820317
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
BE 892528	A		30		
EP 89093	A	E			
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
EP 89093	B	E			
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					

Abstract (Basic): BE 892528 A

The unit comprises one or more solar collectors (1) which are connected into a water circuit (12) provided with a heat exchanger (2) etc. (8) to extract heat from this circuit. The circuit has e.g. flow control (10) and water distribution assemblies (14) inside the collectors, which allow limiting the amount of water in liquid form present in the collectors (e.g. to reduce heat-up time in the morning, prevent freeze-up etc).

The distribution assemblies may comprise narrow passages through which the water enters at a limited flow rate across an absorbent collector wall portion. Further details of these assemblies and the control system are specified. FL

1/2

Abstract (Equivalent): EP 89093 B

Sun heating equipment comprising at least one sun collector (1), which comprises at least one upwardly extending hollow tightly closed absorbing plate (22) and presents an inlet for heat-transfer fluid at the top of the absorbing plate (22) and an outlet (29) for said fluid at the bottom of the absorbing plate (22), a line (12) for said heat transfer fluid which connects the outlet (29) of said collector (1) to the inlet thereof, a vacuum pump (3) which is directly mounted in said line (12) and which is of such a type which can pump as well **gaseous** as **liquid fluid**, a flow control device (10) which is mounted upstream of said absorbing plate (22) and lets through a flow rate of fluid in liquid form which is substantially equal to that flow rate which can be vaporised in the absorbing plate (22) with a determined sun radiation on said absorbing plate (22) so that the fluid does not fill completely at any height whatsoever said absorbing plate (22) and is vaporised at least for the most part before reaching the bottom of said absorbing plate (22) and means (2 or 3,11,3,8,9) to permit **condensation** of the **vaporised** heat-transfer **fluid** and to **remove** heat from the **fluid** inside said line, characterised in that the absorbing plate (22) comprises two panels (23) which are secured with the edges (24) thereof to one another and which have depressons (25) extending in a first direction over part of the absorbing plate width and thus forming flow channels (26) extending in this first direction, said flow channels (26) connecting said inlet with said outlet (29) inside said absorbing plate (22), the inner walls of said absorbing plate (22) being **moistenable** at least in the location of the flow channels (26), that the equipment comprises a distributing device (14) which extends in a first direction perpendicular to the above-mentioned first direction of the flow ch annels (26) and which feeds the fluid in liquid form with a limited flow rate to said flow channels (26), so as to h

33/3,AB/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX

002259689
WPI Acc No: 1979-58891B/197932
Solution concentration using solar energy - involves passing hot **gas** into **soln.** then **removing** and condensing resulting **water vapour**
Patent Assignee: SHIMODA H (SHIM-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 54081171	A	19790628				197932	B

Priority Applications (No Type Date): JP 77148962 A 19771212

Abstract (Basic): JP 54081171 A

A high temperature gas heated by solar heat, is introducd into a solution tank to evaporate water and form steam. The vapour containing the steam is removed and thus the solution is concentrated. The solution tank is of a double construction comprising an inner tank and an outer tank having a thermally insulating wall. The **moisture** gas condenses on a ceiling due to the temperature difference between the atmos. and internal temps., and drops on to a tank bottom to be **discharged** as **water** drops from a pipe.

33/3,AB/12 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

000950310
WPI Acc No: 1973-27551U/197320
Recovery of unreacted monomer and solvent - for recycling in prepn of ethylene/alpha olefin copolymers
Patent Assignee: ESSO RES & ENG CO (ESSO)
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
FR 2147183	A					197320	B
JP 48028587	A					197324	
US 3816379	A	19740611				197425	
CA 1002243	A	19761220				197702	
JP 80021765	B	19800612				198028	

Priority Applications (No Type Date): US 71165986 A 19710726

Abstract (Basic): FR 2147183 A

A process for recycling unreacted monomers and solvent in the prepn of ethylene/alpha-olefin (3-10C) copolymers using a Ziegler catalyst and a co-catalyst, comprises the following sequential steps:- (A). The **effluent liquid** from the reactor is treated with the **solvent vapour** (recovered from subsequent step F) at a pressure lower than the reactor pressure and a temperature sufficient to separate a first head fraction containing unreacted monomer, light impurities and a large proportion of the solvent, and a tail fraction comprising a soln of the copolymer, (B). The tail fraction from (A) is treated with **water vapour** to obtain a second head fraction containing heavy impurities, **water vapour** and **moist** of the solvent, and a second tail fraction containing a suspension of the copolymer, (C). The second head fraction is condensed, (D). The **condensate** from (C) is fractionated to **remove water** (head) and a give a tail fraction containing anhydrous solvent and all the heavy impurities, (E). The tail fraction from (D) is separated into a head fraction containing pure solvent and a tail fraction containing heavy impurities and (F). The purified solvent is recycled to step (A). The process is an improvement over prior art in that the purifying medium in step(A) is the pure recycled **solvent vapour** instead of **water vapour** thus avoiding contamination of the monomer with water and CO2 and eliminating the use auxiliary drying appts and other fractionating columns to purify the monomer.

33/3,AB/13 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

06810682
DEHUMIDIFYING MEMBRANE AND PRODUCTION OF DEHUMIDIFYING MEMBRANE

PUB. NO.: 2001-038173 [JP 2001038173 A]
PUBLISHED: February 13, 2001 (20010213)
INVENTOR(s): SAITO TOMONARI
APPLICANT(s): NOK CORP
APPL. NO.: 11-221635 [JP 99221635]

FILED: August 04, 1999 (19990804)

ABSTRACT

PROBLEM TO BE SOLVED: To improve the tolerance and film strength of a dehumidifying membrane, to suppress permeation of air and to maintain excellent **removing** performance of **water vapor** by laminating a hydrophilic organic polymer material in a thin film state on the surface of a porous base body having micropores.

SOLUTION: The dehumidifying membrane 1 is produced by laminating a chitosan thin film 3 as a hydrophilic organic polymer material on the surface of a porous alumina hollow fiber 2. The chitosan thin film 3 is formed as a homogeneous and dense thin film layer on the surface of the porous alumina hollow fiber 2 so as to use such a phenomenon that the thin film layer in contact with **water vapor dissolves** and diffuse **moisture** to separate as well as to secondarily use the capillary **condensation** phenomenon of **moisture** in the pores of the thin film. The pore diameter of the micropore is specified to ≤5 μm. Thereby, the tolerance and film strength of the dehumidifying membrane 1 against a mist component such as oil in air can be improved and permeation of air is suppressed to maintain excellent **removing** performance for **water vapor**.

33/3,AB/14 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

06426494
FUEL CELL SYSTEM

PUB. NO.: 2000-012057 [JP 2000012057 A]
PUBLISHED: January 14, 2000 (20000114)
INVENTOR(s): MARUYAMA TERUO
APPLICANT(s): AISIN SEIKI CO LTD
APPL. NO.: 10-180988 [JP 98180988]
FILED: June 26, 1998 (19980626)

ABSTRACT

PROBLEM TO BE SOLVED: To stably supply reformed gas to a fuel cell stack without causing **moisture** to be condensed in the reformed gas in starting and during operation of a fuel cell system.

SOLUTION: A reformed **gas** pipe line 16, through which reformed gas flows between a reformer 3 and a fuel cell stack 10 is heated and temperature-held directly or through a high temperature heating oil circulating pipe line 11 with a reformed gas, capable of out utilizing in the fuel cell stack 10 because of high CO concentration coming out of the reformer 3 in starting or exhaust gas of a combustion burner 6 for burning unused hydrogen from the fuel cell stack 10. The reformed gas pipe line 16 is held at a temperature which does not condense steam to avoid the unstable state of **moisture** in the reformed gas or stoppage of power generation, in the worst case caused by **condensation** of steam. A drain tank 15 is installed to **remove** the condensed **water** from the reformed **gas** pipe line 16 and storage, in case of the steam being condensed in the reformed gas pipe line 16.

36/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007558424
WPI Acc No: 1988-192356/198828
XRPX Acc No: N88-147108
Heat dissipating closed cooling system chamber - has U-shaped cross-section channels around chamber inner surfaces to **move** **cooling fluid** by capillary action
Patent Assignee: SUNDSTRAND CORP (SUNH)
Inventor: COOK A; LENTS C E
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2199650	A	19880713	GB 8729696	A	19871221	198828	B
FR 2608841	A	19880624				198832	
JP 63166253	A	19880709	JP 87321629	A	19871221	198833	
US 4805691	A	19890221	US 86944758	A	19861222	198910	
GB 2199650	B	19901114				199046	

Priority Applications (No Type Date): US 86944758 A 19861222
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2199650	A		14		
US 4805691	A		4		

Abstract (Basic): GB 2199650 A

A substrate (14) with a heat producing electronic component (16) is mounted directly on a heat dissipating structure (10). The heat dissipating structure has a closed chamber with adjacent condenser and evaporator sections and contains a supply of liquid cooling **fluid** with a predetermined **vaporisation** temperature Several channels (40,42) are strategically arranged in the surfaces bounding the chamber to **move** the cooling **fluid** by capillary action in a predetermined path between the condenser and evaporator sections in heat exchange relationship over the chamber walls to maintain the substrate at an acceptable temperature

A heat sink, in heat exchange relationships with the condenser section of the heat dissipating structure, maintains a temperature differential between the evaporator and condenser sections and assures that the condenser section is cooled to condense the cooling fluid. The pressure in the chamber is less than atmospheric pressure.

ADVANTAGE - Maximum dissipation of heat and improves reliability

Abstract (Equivalent): GB 2199650 B

A heat dissipating mounting for heat-producing electronic components, comprising a substrate for mounting one or more of the components, in heat-exchange relationship with a cooling zone at or near one end of a heat-dissipating structure, and means for hermetically sealing the component or components and at least a part of the substrate, wherein the heat-dissipating structure comprises first and second pairs of facing side walls and a pair of end walls which together define a closed fluid flow chamber, liquid coolant within the fluid flow chamber and capillary channels defined in both of the pairs of facing side walls for causing the liquid coolant to flow from a **condensation** zone remote from the substrate to the cooling zone, there to vaporize when heat produced by the one or more components raises the temperature of the substrate.

Abstract (Equivalent): US 4805691 A

A substrate with a heat producing electronic component is mounted

directly on a heat dissipating structure. The structure has a closed chamber with adjacent condenser and evaporator sections and contains a supply of cooling **fluid** with a predetermined **vaporisation** temperature. The evaporator section is in heat transfer relation with the substrate and the electronic component. A number of channels are arranged in the surfaces bounding the chamber to **move** the cooling **fluid** by capillary action in a set path between the condenser and evaporator sections in heat exchange relationship over the chamber walls to maintain the substrate at an acceptable temperature.

A heat sink, in heat exchange relationship with the condenser section of the heat dissipating structure, maintains a temperature differential between the evaporator and condenser sections and assures that the condenser section is cooled sufficiently to condense the cooling fluid.

USE - Cooling technique for compact electronic inverter

36/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

004471079
WPI Acc No: 1985-297957/198548
XRPX Acc No: N85-221825
Condenser provided with heat exchanger - is rotated in airtight cylindrical housing filled with fluid to be condensed
Patent Assignee: SAGA UNIV (UYSA-N)
Inventor: NAKAOKA T; UEHARA H
Number of Countries: 005 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 162578	A	19851127	EP 85302721	A	19850417	198548	B
US 4658890	A	19870421	US 85722367	A	19850412	198718	
EP 162578	B	19880629				198826	
DE 3563560	G	19880804				198832	

Priority Applications (No Type Date): JP 8475790 A 19840417
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 162578	A	E	18		
Designated States (Regional): DE FR GB SE					
EP 162578	B	E			
Designated States (Regional): DE FR GB SE					

Abstract (Basic): EP 162578 A

The condenser housing (1) has an inlet (2) for a **fluid** in a **vapour** state and an outlet (3) for the fluid in liquid state. A cylindrical vessel (5a) is rotatably mounted within the housing. Hollow blades (6a,6b) are mounted on the vessel and communicate with the interior of the vessel. Coolant is allowed to pass into and out of the vessel and hollow blades.

The hollow blades are pref. positioned in coplanar pairs extending from opposite sides of the vessel. A divider extends transversely to the axis of rotation of the vessel to separate the interiors of each of the pairs of blades and the interior of the vessel into two interconnected parts.

ADVANTAGE - Fluid to be condensed is always uniformly contacted by **coolant**-through **surfaces** of the blades with high performance of **condensation**.

1/2

Abstract (Equivalent): EP 162578 B

A condenser having a housing (1) provided with an inlet (2) for a **fluid** in **vapour** state to be condensed and an outlet (3) for said fluid in liquid state, a vessel (5a) rotatably mounted within the housing, a plurality of hollow blades (6a,6b) mounted on the vessel and with the interior thereof, and an inlet (8) and outlet (9) to pass a coolant into and out of the vessel and hollow blades, characterised in that the interiors of the vessel (5a) and the blades (6a,6b) are divided into two interconnected parts (10,11) by a divider (12) mounted on a rotatable axle (5) of the vessel and extending in he the longitudinal direction of the vessel (8pp)

Abstract (Equivalent): US 4658890 A

Condenser is provided with a heat exchanger which is rotated in an airtight cylindrical vessel filled with a fluid to be condensed.

The rotated heat exchanger has a structure almost similar to a rotor of a stem turbine, formed of pairs of hollow blades arranged individually opposite to each other on both sidewalls of an elongated rectangular hollow axle **rotated** in the **fluid** to be condensed. All of the hollows are communicated with each other, so as to circulate coolant.

ADVANTAGE - The fluid to be condensed always uniformly contacts with the **coolant** through **surfaces** of the blades with an extremely high performance of **condensation**. (6pp)1

39/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016198598
WPI Acc No: 2004-356484/200433
Related WPI Acc No: 2004-022248
XRPX Acc No: N04-285048
Removal method for non-volatile solvent residue in closed circuit processing system, involves applying negative gauge pressure to chamber to non-condensable **gases** and introducing **solvent**, **solvent** mixture, **water/gas** in **liquid** or **vapor** state
Patent Assignee: FREDERICK C (FRED-I); GRAY D (GRAY-I)
Inventor: FREDERICK C; GRAY D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040089324	A1	20040513	US 2002164792	A	20020606	200433 B
			US 2003701761	A	20031104	

Priority Applications (No Type Date): US 2002164792 A 20020606; US 2003701761 A 20031104
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040089324	A1		12	B08B-005/04	Div ex application US 2002164792

Abstract (Basic): US 20040089324 A1
Abstract (Basic):
NOVELTY - The method involves applying a negative gauge pressure to a **processing chamber** (12) to non-condensable gases and then introducing a solvent, **solvent** mixture, **water** or **gas** in either a **liquid** or **vapor** state to remove soluble contaminants from the surface of an object (18) being processed in the chamber. Afterwards, the residual solvent or solution is recovered from the object and chamber.

DETAILED DESCRIPTION - A secondary cleaning step directs a **vapor** state **fluid** at high velocity at a solid surface of the object to remove insoluble material left behind after the pretreatment step. A final series of steps recovers any loose impediments or residual **liquid** or **vapor** from the chamber and returns the chamber to atmospheric pressure for removal of the cleaned object.

USE - For non-volatile solvent residue in closed circuit processing system.

ADVANTAGE - Enables impacting of fluid motion as a particle removing process in the absence of atmospheric interference or in a highly reduced atmosphere of stagnant **fluid**. Attains effective particle **removal** from a solid surface. Enables to perform a surface cleansing to remove contaminants on the surface, which may physically bond the particles to the surface. Enhances the impacting effect of solid pellets.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic view of the closed circuit processing system
Process method (10)
Object (18)
Support (20)
Valve (22,72)
Lid (28)

Air handling vacuum pump (38)
Jet (78)
pp; 12 DwgNo 1/6

39/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015940028
WPI Acc No: 2004-097869/200410
XRAM Acc No: C04-040587
Preparation of oral carotenoid composition to treat macular degeneration involves mixing carotenoid in solvent with an oily carrier liquid followed by passing through spray nozzle along with stream of gas
Patent Assignee: ZEAVISION LLC (ZEAV-N); GREENBURY D K (GREE-I); GUERRA-SANTOS L H (GUER-I)
Inventor: GREENBURY D K; GUERRA-SANTOS L H
Number of Countries: 052 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030232892	A1	20031218	US 2002173174	A	20020618	200410 B
WO 2003105807	A1	20031224	WO 2003US19104	A	20030618	200410
AU 2003245545	A1	20031231	AU 2003245545	A	20030618	200451

Priority Applications (No Type Date): US 2002173174 A 20020618
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030232892	A1		14	A61K-031/12	
WO 2003105807	A1	E		A61K-009/14	

Designated States (National): AU BR CA CN CZ HU JP MX NO PL UA ZA
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003245545	A1			A61K-009/14	Based on patent WO 2003105807

Abstract (Basic): US 20030232892 A1
Abstract (Basic):

NOVELTY - Preparation of carotenoid composition involves mixing carotenoid in a solvent and then with an oily carrier liquid followed by passing through a spray nozzle along with a stream of gas.

DETAILED DESCRIPTION - Preparation of carotenoid composition for oral ingestion involves

(1) mixing a carotenoid in a solvent to create a solvent-carotenoid liquid mixture;

(2) mixing the solvent-carotenoid liquid mixture with an oily carrier liquid which is non-toxic and orally ingestible to create a solvent-carotenoid-carrier liquid mixture; and

(3) passing the solvent-carotenoid-carrier liquid mixture and a stream of gas through a spray nozzle and contacting a mist which emerges from the spray nozzle with at least one solid surface designed for **condensate** collection to form a liquefied **condensate** of the mist which can be collected and allow the **gas** and the **solvent** to be removed from the liquefied **condensate**.

The liquefied **condensate** contains the selected carotenoid in a form having average particle sizes less than about 10 microns, in an oily carrier liquid.

An INDEPENDENT CLAIM is also included for a carotenoid preparation comprising zeaxanthin of average particle size less than 4 microns in diameter suspended in an edible oily carrier substance.

ACTIVITY - Ophthalmological.
MECHANISM OF ACTION - None given.
USE - For the preparation of carotenoid composition for oral ingestion (claimed), for the prevention and treatment of macular degeneration.
ADVANTAGE - The process provides zeaxanthin composition in a cost effective way with highest possible bioavailability compared to the known zeaxanthin composition with larger particles.
pp; 14 DwgNo 0/3

39/3,AB/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014622330
WPI Acc No: 2002-443034/200247
Related WPI Acc No: 2001-648971; 2002-011222; 2002-017712; 2002-017713; 2002-017714; 2002-017715; 2002-017716; 2002-026174; 2002-026274; 2002-026277; 2002-034419; 2002-062257; 2002-267605; 2002-361205; 2002-425018; 2002-425019; 2002-425131; 2002-425269; 2002-425270; 2002-425271; 2002-425272; 2002-425308; 2002-425325; 2002-425348; 2002-433953; 2002-433954; 2002-433955; 2002-442917; 2002-443033; 2002-443323; 2002-443411; 2002-453510; 2002-462626; 2002-462667; 2002-478723; 2002-478855; 2002-488664; 2002-488683; 2002-488689; 2002-488825; 2002-498950; 2002-499121; 2002-507184; 2002-526656; 2002-526662; 2002-526663; 2002-536469; 2002-536470; 2002-536473; 2002-536493; 2002-546473; 2002-546552; 2002-556416; 2002-556417; 2002-556440; 2002-556441; 2002-556442; 2002-556443; 2002-556477; 2002-556486; 2002-556487; 2002-556488; 2002-556614; 2002-565615; 2002-565631; 2002-573643; 2002-573644; 2002-582216; 2002-589135; 2002-626390; 2002-642051; 2002-705764; 2002-730939; 2002-741241; 2002-750833; 2003-045812; 2003-045937; 2003-090588; 2003-174008; 2003-247687; 2003-340818; 2003-354033; 2003-391555; 2003-416423; 2003-456902; 2003-456904; 2003-481056; 2003-492660; 2003-492839; 2003-531449; 2003-554765; 2003-576140; 2003-778317; 2003-778318; 2003-786795; 2003-851506; 2004-041710; 2004-068762; 2004-224251
XRAM Acc No: C02-126082
XRPX Acc No: N02-348980
In situ treatment of coal formation by providing heat to at least one portion of the formation, allowing heat to transfer from heat sources to selected section of formation and producing mixture from formation
Patent Assignee: BAXLEY P T (BAXL-I); BERCHENKO I E (BERC-I); DE ROUFFIGNAC E P (DROU-I); KARANIKAS J M (KARA-I); MAHER K A (MAHE-I); SCHOELING L G (SCHO-I); STEGEMEIER G L (STEG-I); VINEGAR H J (VINE-I); WELLINGTON S L (WELL-I); ZHANG E (ZHAN-I)
Inventor: BAXLEY P T; BERCHENKO I E; DE ROUFFIGNAC E P; KARANIKAS J M; MAHER K A; SCHOELING L G; STEGEMEIER G L; VINEGAR H J; WELLINGTON S L; ZHANG E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020033280	A1	20020321	US 2000199213	P	20000424	200247	B
			US 2000199214	P	20000424		
			US 2000199215	P	20000424		
			US 2001841501	A	20010424		

Priority Applications (No Type Date): US 2001841501 A 20010424; US 2000199213 P 20000424; US 2000199214 P 20000424; US 2000199215 P 20000424
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020033280 A1			371	E21B-007/06	Provisional application US 2000199213
					Provisional application US 2000199214
					Provisional application US 2000199215

Abstract (Basic): US 20020033280 A1

Abstract (Basic):

NOVELTY - In situ treatment of coal formation comprises: providing heat from at least one heat source (801) to at least one portion of the formation, allowing the heat to transfer from the heat sources to selected section of the formation, and producing a mixture from the formation. The heat sources are within at least one open wellbore in the formation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) forming heater wells in a coal formation, which comprises forming a first wellbore in the formation, forming a second wellbore in the formation using magnetic tracking such that the second wellbore is arranged parallel to the first wellbore, and providing at least one heating mechanism within the first wellbore and at least one heating mechanism within the second wellbore such that the heating mechanisms can provide heat to at least a portion of the formation;

(B) a system configured to heat a coal formation, which comprises a heater in an opening in the formation and configured to provide heat to at least a portion of the formation during use, an oxidizing fluid source and a conduit disposed in the opening and configured to provide an oxidizing fluid from the source to a reaction zone in the formation during use, where the oxidizing fluid is selected to oxidize at least some hydrocarbons at the reaction zone during use such that heat is generated at the reaction zone, and where the system is configured to allow heat to transfer by conduction from the reaction zone to a pyrolysis zone of the formation during use;

(C) in situ production of synthesis gas from a coal formation, which comprises heating a section of the formation to a temperature to allow synthesis gas generation, where permeability of the section is uniform and greater than a permeability of an unheated section of the formation when the temperature to allow synthesis gas generation within the formation is achieved; providing a synthesis **gas** generating **fluid** (818, 821) to the section to generate synthesis gas; and removing synthesis gas (823) from the formation;

(D) forming a spent portion of formation within a coal formation, which comprises heating a first portion (805) of the formation to pyrolyze hydrocarbons within the first portion and to establish a uniform permeability within the first portion, and cooling the first portion;

(E) sequestering carbon dioxide within a coal formation, which comprises heating a portion of the formation to increase permeability and form a uniform permeability within the portion, allowing the portion to cool, and storing carbon dioxide within the portion; and

(F) producing ammonia using a coal formation, which comprises separating air to produce an oxygen (O2) rich stream and a nitrogen (N2) rich stream; heating a selected section of the formation to a temperature to support reaction of hydrocarbon material in the formation to form synthesis gas; providing synthesis **gas** generating **fluid** and at least a portion of the O2 rich stream to the selected section; allowing the synthesis **gas** generating **fluid** and O2 in the O2 rich stream to react with at least a portion of the hydrocarbon material in the formation to generate synthesis gas; producing synthesis gas comprising H2 and carbon

monoxide (CO) from the formation; providing at least a portion of the H2 in the synthesis gas to an ammonia synthesis process; providing N2 to the ammonia synthesis process; and using ammonia synthesis process to generate ammonia.

USE - The method is used for treating a coal formation in situ. It is used for producing a mixture of hydrocarbon products, hydrogen, and other products from various coal formations. It is useful for producing synthesis gas, carbon dioxide, and ammoniaclaimed). The hydrocarbons produced are used as energy resources, feedstocks, and as consumer products.

ADVANTAGE - The method economically produces high quality hydrocarbons, hydrogen, and other products from various coal formations. Sequestering fluid within the formation reduces or eliminates fluid that is released to the environment due to operation of the in situ conversion process. The method reduces energy input costs, and the oxidation reaction may be propagated slowly through a greater portion of the formation so that fewer heat sources may be required to heat such a greater portion in comparison to heating by a conventional method. The uniform permeability provides high recovery of synthesis gas as compared to synthesis gas generation in a coal formation that has not been so treated.

Cooling of the formation increases the strength of the rock in the formation, thus mitigating subsidence, and increases absorptive capacity of the formation. The method reduces or eliminates high temperature pumping of liquids from the production well, which in turn decreases production costs. Heating at or through the production well prevents **condensation** and/or refluxing of production fluid when it is moving in the production well near the overburden, increases heat input into the formation, and/or increases formation permeability at or near the production well.

DESCRIPTION OF DRAWING(S) - The drawing is a schematic diagram of using pyrolysis **water** to generate synthesis **gas** in a formation.

Heat source (801)
Electric heater (803)
First section of the formation (805)
Produced pyrolysis fluid (807)
Aqueous stream (811)
Vapor stream (813)
Synthesis **gas** generating **fluid** (818, 821)
Synthesis gas (823)
Synthesis gas production well (825pp; 371 DwgNo 29/135

39/3,AB/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009879139
WPI Acc No: 1994-159053/199419
XRAM Acc No: C94-072965
Appts. for removing BTX-type gases from a liq. - has oil-water separator and vacuum chamber to pull **gases** from oil-free **water** for subsequent condensing
Patent Assignee: NORMAN J M (NORM-I)
Inventor: NORMAN J M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5312552	A	19940517	US 9312373	A	19930202	199419	B

Priority Applications (No Type Date): US 9312373 A 19930202
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5312552	A		6	B01D-017/12	

Abstract (Basic): US 5312552 A

Separator for removing BTX type gases (benzene, toluene, xylene) from water has an oil-water separator (10). The separated water is directed to a vacuum system (12) which draws off the BTX gases. The vacuum system includes a vacuum chamber (30) with a valved inlet line (32) from the separator and a valved outlet line (36). A pump (40) in the outlet line pumps purified water from the vacuum chamber and is effective in generating a vacuum. A liq. level control (42) associated with the vacuum chamber controls pump operation and the outlet control valve for selectively pumping the **water**. A **gas collector** (50) is connected to the vacuum chamber via a valved vacuum line (44). A vacuum pump (48) pumps toxic gases vaporised in the vacuum chamber to the collector under the control of a pressure sensor (54). This actuates the pump when the pressure in the vacuum chamber rises above a selected value.

Pumping of the purified water from the vacuum chamber (30) creates a vacuum in the top **portion** of the **chamber** that causes vaporization of the BTX **gases dissolved** within the **water**. They **collect** in the upper **portion** of the **chamber** for removal when the pressure, monitored by sensor (54), rises above a predetermined value. Pref. the removed gases are dispersed in a liquid (52) and condensed by coil (56).

USE/ADVANTAGE - Removes BTX-type **gases** from **water** from lakes or streams. The gases are condensed and isolated once **removed** from the **water** for separate disposal.

Dwg.1/2

39/3,AB/5 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

05268906
METHOD FOR **REMOVING DISSOLVED GAS** IN **LIQUID**

PUB. NO.: 08-224406 [JP 8224406 A]
PUBLISHED: September 03, 1996 (19960903)
INVENTOR(s): TASAKA HIROSHI
APPLICANT(s): MITSUBISHI RAYON CO LTD [000603] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-033443 [JP 9533443]
FILED: February 22, 1995 (19950222)

ABSTRACT

PURPOSE: To maintain a high removal efficiency for a long time when evacuating a gas phase space in a **dissolved gas** removal module to remove **dissolved gas** by introducing waste gas from the module to an air intake device after passing it through a heating chamber using as a heating source the heat generated at a motor of the air intake device.

CONSTITUTION: In a **dissolved gas** removal module, hollow fiber membranes 3 are arranged almost in parallel in a **vessel** 2, and the **inside** of the **vessel** 2 is divided into two spaces. The 1st

space facing the outer surface of the hollow fiber membranes 3 is provided with an discharge port 5 and an air intake port 6, and the 2nd space communicating with the hollow part of the hollow fiber membranes 3 is provided with an introducing port 7 for introducing a liquid and a bring-out port 8 for bringing out the **liquid** after treatment. **Gas**, steam and **condensate** discharged from the discharge ports 5, 9 is led to a **condensate** evaporator (heating chamber) 11 installed in contact with a motor part of a diaphragm type vacuum pump 10. After **condensate** and mist are evaporated by the heat generated at a motor part of the evaporation chamber 11 and turned into steam, the gas is fed to the vacuum pump 10 and discharged.

39/3,AB/6 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

01926634
COOLING AND HEATING APPARATUS FOR BUILDING USING HEAT PIPE

PUB. NO.: 61-140734 [JP 61140734 A]
PUBLISHED: June 27, 1986 (19860627)
INVENTOR(s): SAITO SUSUMU
KAMIO SHINJI
TAZAKI SEIJI
APPLICANT(s): AGENCY OF IND SCIENCE & TECHNOL [000114] (A Japanese Government or Municipal Agency), JP (Japan)
APPL. NO.: 59-262954 [JP 84262954]
FILED: December 14, 1984 (19841214)
JOURNAL: Section: M, Section No. 535, Vol. 10, No. 336, Pg. 120, November 14, 1986 (19861114)

ABSTRACT

PURPOSE: To provide a cooling and heating apparatus using heat pipe without requiring power by disposing an outside heat collector, an outside radiator and inside heat collecting and radiating units which are connected by **condensate** transmission pipes and gas transmission pipes with valve means thereof.

CONSTITUTION: When the heating is desired in the winter season etc., an outside heat collector 4 acts as a heat pipe vaporizing **section** and **inside** heat collecting and radiating units 6, 7 as a heat pipe condensing section, and the liquid operating fluid (a) in the heat pipe spreads nearly all over the outside heat collector 4 by the capillary action to be heated and vaporized by sunlights falling on the outside heat collector 4. When the cooling is desired in the summer season etc., the inside heat collecting and radiating units 6, 7 act as heat pipe vaporizing sections and an outside radiator 5 as a heat pipe condensing section, and the operating fluid (d) in the inside heat collecting and radiating units 6, 7 is vaporized by absorbing the heat in rooms 2, 3. The **gasified** operating **fluid moves** through a **gas** transmission pipe 8 to the outside radiator 5 to be condensed by releasing the heat to the atmosphere.

40/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014234253
WPI Acc No: 2002-054951/200207
Related WPI Acc No: 2003-467545
XRAM Acc No: C02-015616
XRPX Acc No: N02-040538
Oil refining system comprises vortex separator, vortex vapor generator and vortex vapor condenser
Patent Assignee: TIKHONOV V B (TIKH-I); ZHURIN V V (ZHUR-I)
Inventor: TIKHONOV V B; ZHURIN V V
Number of Countries: 021 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010046460	A1	20011129	US 2000174687	P	20000106	200207 B
			US 2000746337	A	20001220	
WO 200251964	A2	20020704	WO 2001US45707	A	20011205	200250

Priority Applications (No Type Date): US 2000174687 P 20000106; US 2000746337 A 20001220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010046460	A1		21	C10G-051/04	Provisional application US 2000174687
WO 200251964	A2	E		C10G-009/00	

Designated States (National): JP
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Abstract (Basic): US 20010046460 A1
Abstract (Basic):

NOVELTY - An oil refining system comprises a vortex separator for separation of oil from satellite **gases**, **water** and **dissolved** in crude oil salts; vortex vapor generators providing intensive process of evaporation in volume of **rotating liquid**; and vortex **vapor** condenser for gas products of oil distillation with corresponding cooling system.

DETAILED DESCRIPTION - An oil refining system comprises (a) a unit of preliminary oil purification from mixtures, **water** and satellite **gases** contained in crude oil; and a second unit for deep oil separation for fractions consisting of consecutive stages of heating, evaporation of initial oil and residual products of thermal separation. The unit of preliminary oil purification includes a reservoir (1) or pipeline with crude oil; pump (2) for crude oil supply into a vortex separator for separation of oil from water and other mixtures; a coarse filter (3) for purification from mechanical mixtures; a heat exchanger for preliminary heating of crude oil with a purpose of reducing viscosity of the crude oil; a vortex separator (4) for separation of oil from satellite **gases**, **water** and **dissolved** in crude oil salts; and pumps for oil supply to consecutive units for its separation for fractions and **water removal** into extraction systems for recovery of useful products. The second unit includes intermediate furnaces (10) or heat exchangers (9) for heating of initial product to temperatures corresponding to release of fraction of given composition (close to a boiling point of a particular fraction); vortex vapor generators (11, 11', 11) providing intensive process of evaporation in volume of **rotating liquid**; a pump utilized for extraction of evaporation products

into condensers and transfer of unevaporated liquid into a consecutive stage of fraction separation; and a vortex vapor condenser (12, 12', 12) for gas products of oil distillation with corresponding **cooling** system. A **condensation** heat can be utilized for preliminary heating of crude oil or for intermediate stages of oil separation for fractions. **Liquid** products from vortex **vapor** condensers of separate stages are supplied by a pump into corresponding reservoirs.

INDEPENDENT CLAIMS are also included for;

(1) A vortex separator utilizing inertia forces of **rotating liquid** for separation of not purified crude oil from water and other heavy mixtures;

(2) A vortex vapor generator utilizing inertia forces of **rotating liquid** for increase of oil vapor intensity output due to increase of up floating bubbles developed in a vortex vapor generator volume in a field of accelerating forces;

(3) A vortex vapor condenser of oil refinery products utilizing inertia forces of **rotating liquid** for a **condensation** of oil's different fractions;

(4) A two-zone combustion furnace for reducing energy spending and improvement of ecology of oil refining processes and permitting improvement of combustion of oil heavy fractions for a complete combustion with a decrease of solid particles output in outgoing gases comprising a first band of burners of light gases developing a first combustion zone with high temperature; and a second band of burners of heavy residue and gases providing additional combustion of unburned gases and solid particles; and

(5) A catalytic process in a catalytic vortex vapor generator.

USE - For separating crude oil from a mixture of crude oil and water and dissolved heavy mixtures and then separating the oil into fractions of different boiling points.

ADVANTAGE - The invention permits obtaining fine uniform oil products by both thermal distillation and cracking.

DESCRIPTION OF DRAWING(S) - The figure shows an oil refining system of the invention.

Reservoir (1)
Pump (2)
Coarse filter (3)
Vortex separator (4)
Heat exchangers (9)
Furnaces (10)
Vortex vapor generators (11, 11', 11)
Vortex vapor condenser (12, 12', 12)
pp; 21 DwgNo 1/7

43/3,AB/1 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1238664 NTIS Accession Number: PB86-192267
Coal Gasification Environmental Data Summary: Low- and Medium-Btu Wastewaters
(Final rept. Sep 84-Dec 85)
Castaldi, F. J. ; Skinner, F. D.
Radian Corp., Austin, TX.
Corp. Source Codes: 029117000
Sponsor: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Report No.: EPA/600/7-86/015A
Apr 86 122p
Languages: English
Journal Announcement: GRAI8613
See also PB86-192275. Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
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NTIS Prices: PC A06/MF A01
The report is a compilation of environmental characterization data for wastewaters from low- and medium-Btu coal gasification facilities. Fixed-bed, entrained-bed, and ash-agglomerating **fluidized**-bed coal **gasification** processes were examined. The fixed-bed gasifiers are the Chapman, Wellman-Galusha, Riley, Foster Wheeler/STOIC, and Lurgi-type processes. The entrained-bed gasifiers are the Koppers-Totzek and Texaco processes. The KRW-PDU was used as an example of an ash-agglomerating fludized-bed process. The types of wastewaters examined from the various coal gasification processes are product gas quench **condensates**, cyclone dust quench **waters**, ash pan **waters**, **gas** compression and **cooling condensates**, acid **gas** **removal waters** , and leachates from slag and ash disposal facilities. The available wastewater quality and quantity data for these aqueous waste streams are assembled, and the associated environmental significance is addressed.

43/3,AB/2 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

06270714
E.I. No: EIP03037321981
Title: Study on hydrogen internal combustion Stirling engine (1st report, combustion experiment on prototyped engine)
Author: Takahashi, Sanyo; Morita, Hiroyuki; Kurata, Osamu; Yamashita, Iwao
Corporate Source: Institute for Energy Utilization National Institute of AIST, Tsukuba-shi, Ibaraki, 305-8564, Japan
Source: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v 68 n 669 May 2002. p 1593-1600
Publication Year: 2002
CODEN: NKGBDD ISSN: 0387-5016
Language: Japanese
Abstract: This paper presents a new concept of hydrogen internal

combustion Stirling engine and experimentally clarifies the effect of the internal combustion by comparing performances of a prototyped engine on internally heating and externally heating. The hydrogen combustion Stirling engine utilizes internal combustion of stoichiometric H//2 and O//2 mixture injected into the working **fluid gas** as thermal input, and the cyclic operation completes with the **removal** of the **water** from the engine after the **condensation** at the **cooler**. The prototyped engine substitutes a catalytic combustor for the conventional heater and H//2-O//2 mixture is injected at a constant flow rate between the regenerator and the cooler. The engine performance was evaluated measuring temporal change in pressure and temperature in the expansion and the compression space, thermal input and rejected heat. The internal heating performance showed almost the same characteristics as that of external heating except for the increase of expansion work due to the direct thermal input. The increase of expansion work improved the engine performance, particularly in high engine speed region. Furthermore, the steady premixed injection method showed a possibility to suppress easily the mixture strength in working gas. 8 Refs.

43/3,AB/3 (Item 1 from file: 315)
DIALOG(R)File 315:ChemEng & Biotec Abs

525872 CEABA Accession No.: 35-08-000679 DOCUMENT TYPE: Journal
Title: VOC's **removal** from **water** with a hybrid system coupling a PTMSP membrane module with a stripper
Orig. Title: Entfernung von fluechtigen organischen Komponenten mittels eines Hybridsystems aus einem PTMSP-Membranmodul und einem Stripper
AUTHOR: Roizard, D. ; Teplyakov, V. ; Favre, E. ; Fefilatiev, L. ; Lagunstsov, N. ; Khotimsky, V.
CORPORATE SOURCE: Lab. d. Sciences du Genie Chimique UPR CNRS 6811, Nancy, F A.V. Topchiev Inst. of Petrochem. Synthesis, Moscow, RU CLIMBI Co., Moscow, RU
JOURNAL: Desalination, Volume: 162, Issue: 1-3, Page(s): 41-46
CODEN: DSLNAH ISSN: 00119164
PUBLICATION DATE: 2004 (20040000)
ABSTRACT: The development of a hybrid system coupling a stripping column with a high-flux polytrimethylsilyl propyne (PTMSP) module for removing low amounts of volatile organic compounds (VOCs) from waste water is described. The process is based on the initial stripping of the VOCs followed by removal by membrane permeation. process theory, simulation and experimental results are presented for toluene and dichloromethane. The solubility of the VOCs was a key parameter influencing the efficacy of waste water purification. Module efficiency could be optimized using pressure ratio, input **gas flux** and **condensation temperature**. The hybrid system also allowed continuous recycling of the **liquid** and **gas** phases.

ABSTRACT: Im Rahmen einer experimentellen Untersuchung im Labormassstab wurde die Verfahrenskombination aus vorgeschalteter Stripperkolonne und anschliessender Membranpermeation zur Abtrennung von fluechtigen organischen Komponenten (0,2 bis 0,6 Ma%) aus einem synthetischen Abwasser untersucht. Als Testfluessigkeit stand ein Gemisch aus Wasser, Toluol und Dichlormethan zur Verfuegung. Der beladene Gasstrom aus der Stripperkolonne wird in ein Plattenmodul geleitet, in dem aufgrund der sehr hohen Permeabilitaet der organischen Komponenten schon bei geringer transmembraner Druckdifferenz eine starke Anreicherung auf der Retentatseite erfolgt. Die Membranen bestehen aus einem keramischen Traegermaterial und einer aktiven Trennschicht

aus Polytrimethylsilylpropin (PTMSP). Das verwendete Strippgas N(sub 2) konnte bei dieser Schaltungsweise im Kreislauf gefuehrt werden. Abhaengig von der Prozesstemperatur und der Groesse des Gasstroms konnten bei Toluol Abtrennraten bis zu 83% und bei Dichlormethan bis zu 55% erzielt werden.

43/3,AB/4 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016312635
WPI Acc No: 2004-470530/200445
XRAM Acc No: C04-176211
XRPX Acc No: N04-371876
Decontamination of oily cuttings from drilling of oil wells and recovery of oily component involves mixing cuttings with solvent compressible to liquid state at specified pressure and temperature
Patent Assignee: ENI SPA (ENIE); ENITECNOLOGIE SPA (ENIE)
Inventor: GUARNERI A; MASSETTI F; NARDELLA A; PALLADO P; TOMACIELLO R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2396374	A	20040623	GB 200329345	A	20031218	200445	B

Priority Applications (No Type Date): IT 2002MI2707 A 20021220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2396374	A		23	E21B-021/06	

Abstract (Basic): GB 2396374 A
Abstract (Basic):
NOVELTY - Decontamination of oily cuttings coming from the drilling of oil wells and the recovery of the oily component involves the step of treating the drill cuttings with a compressed solvent in a liquid state in an extractor, with dissolution of the oily fraction of the cutting.
DETAILED DESCRIPTION - Decontamination of oily cuttings from the drilling of oil wells and the recovery of the oily component involves:
(a) optionally mixing the cuttings with an inert material;
(b) mixing the cuttings with a solvent compressible to the liquid state at a pressure of 45 - 80 bar and at a temperature corresponding to the saturation value, with dissolution of the oily fraction of the cutting;
(c) **removal** of the **liquid** phase (solution) from the solid phase (cutting);
(d) expansion and heating of the solution from the step (a), with the recovery of the oily fraction discharged and the **solvent** in **vapor** phase; and
(e) **cooling** and **condensation** of the solvent and its recycling to the step (a), after possible under-cooling.
USE - For decontamination of oily cuttings coming from the drilling of oil wells, and the recovery of the oily component (claimed).
ADVANTAGE - The novel method allows the contemporaneous declassification of the cutting from dangerous waste products. The use of a compressible solvent in the liquid phase provides recovery efficiency of the oil comparable with that obtained with fluid in the supercritical state, with the exception of CO2, operating at lower

pressure and temperatures; lower dehydration of the solid phase and hence lower production of water to be sent for treatment and decrease in the plant costs, due to the limited operating pressures in terms of equipment and piping. The energy-consumption are greatly reduced, thus allowing the treatment costs to be reduced to competitive levels with consolidated technologies. The oily fraction removed with the use of the compressible fluid is completely recovered at the end of the process, without being contaminated by processing solvent and can be used against for subsequent processing, following refining processes and/or the addition of the additives. The preliminary treatment of the solid charge, effected through a mixing with inert material allows the process restrictions, which limit its feasibility, to be overcome.

pp; 23 DwgNo 0/1

43/3,AB/5 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016304543
WPI Acc No: 2004-462438/200444
XRAM Acc No: C04-172768
XRPX Acc No: N04-366128

Decontamination of oily cuttings from drilling of oil wells and recovery of oily component involves treating cuttings with liquid carbon dioxide, to form solid phase and liquid phase

Patent Assignee: ENI SPA (ENIE); ENITECNOLOGIE SPA (ENIE)
Inventor: GUARNERI A; MASSETTI F; NARDELLA A; TOMACIELLO R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2396373	A	20040623	GB 200329342	A	20031218	200444	B

Priority Applications (No Type Date): IT 2002MI2708 A 20021220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2396373	A		16	E21B-021/06	

Abstract (Basic): GB 2396373 A
Abstract (Basic):

NOVELTY - Decontamination of oily cuttings from the drilling of oil wells and the recovery of the oily component involves treating the drill cuttings with liquid carbon dioxide, to form a solid phase and a liquid phase comprising a solution of oil and liquid carbon dioxide.

DETAILED DESCRIPTION - Decontamination of oily cuttings from the drilling of oil wells and the recovery of the oily component involves (a) mixing the cuttings with carbon dioxide in the liquid state at a pressure of 45 - 80 bar and at a temperature corresponding to the saturation value, with dissolution of the oily fraction of the cutting; (b) **removal** of the **liquid** phase (solution) from the solid phase (cutting); (c) expansion and heating of the solution from the step (b), with the recovery of the oily fraction discharged and CO2 in vapor phase; and (d) **cooling** and **condensation** of CO2 and its recycling to the step (a), after under-cooling.

USE - For decontamination of oily cuttings coming from the drilling of oil wells and the recovery of the oily component (claimed).

ADVANTAGE - The use of the CO2 in the liquid phase provides lower dehydration of the solid phase, and hence consequently lower water production to be sent to the treatment and decrease in the plant costs, due to the limited operating pressures in terms of equipment and

piping. The oily fraction removed with the use of the compressible fluid is completely recovered at the end of the process without being contaminated by processing solvent and can be used against for subsequent processing, following refining processes and/or the addition of the additives. The drill cuttings defined by the current regulations as being harmful waste-products have such characteristics, to make them, after treatment, compatible with the environment, whereas the oily part removed can be re-used as drilling sludge, with the addition of additives. The solvent used is inert under the process and environmental conditions.

pp; 16 DwgNo 0/1

43/3,AB/6 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016290575
WPI Acc No: 2004-448470/200442
XRAM Acc No: C04-168254

Synthesis gas treatment apparatus for treating synthesis **gas** to recover clean **liquid condensate** for use in gasification unit, has heat exchanger, flash tank, and separator with filter

Patent Assignee: MALATAK W A (MALA-I); PAN B X (PANB-I)
Inventor: MALATAK W A; PAN B X

Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040107835	A1	20040610	US 2002309481	A	20021204	200442	B

Priority Applications (No Type Date): US 2002309481 A 20021204
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040107835	A1		7	B01D-053/14	

Abstract (Basic): US 20040107835 A1
Abstract (Basic):

NOVELTY - A synthesis gas treatment apparatus for treating synthesis **gas** to recover clean **liquid condensate** for use in a gasification unit, comprises heat exchanger for cooling the synthesis gas to form a syngas **condensate**; a flash tank for receiving the syngas **condensate** having a reduced pressure; and a separator with filter, for receiving the liquid phase **condensate**.

DETAILED DESCRIPTION - A synthesis gas treatment apparatus for treating synthesis **gas** to recover clean **liquid condensate** for use in a gasification unit, comprises heat exchanger (30) for receiving a synthesis gas having elevated temperature and pressure and cooling the synthesis gas to form a syngas **condensate**; a flash tank for receiving the syngas **condensate**, having a reduced pressure so that the syngas **condensate** separates into a liquid phase **condensate** and a **gas** phase, the **liquid** phase comprising dissolved ammonia; and a separator for receiving the liquid phase **condensate**, having a filtering media for reducing the number of particulates that may be present in the liquid phase **condensate** to form a clean liquid **condensate**. The separator reduces the number of particulates by removing particulates having an average particle diameter greater than 15 mum.

INDEPENDENT CLAIMS are also included for:

(a) a method for treating a synthesis to recover a clean liquid **condensate** for use in a gasification unit, comprising cooling a synthesis gas having elevated temperature and pressure to form a syngas **condensate**; flashing the syngas **condensate** to form a gas phase **condensate** and a liquid phase **condensate**, the liquid phase **condensate** comprising dissolved ammonia; and **removing** from the **liquid** phase **condensate** particulates having an average particle diameter of greater than 15 mum to form a clean liquid **condensate**; and

(b) a method for inhibiting acid-induced corrosion in a gasification unit, comprising cooling a synthesis gas having elevated temperature and pressure to form a syngas **condensate**; flashing the syngas **condensate** to form a gas phase **condensate** and a liquid phase **condensate**, the liquid phase **condensate** comprising dissolved ammonia; **removing** from the **liquid** phase **condensate** particulates having an average particle diameter of greater than 15 mum to form a clean liquid **condensate**; and recycling the clean **liquid condensate** to the **gasification** unit, provided that the clean liquid **condensate** is not used to cool or scrub the hot raw synthesis gas.

USE - For treating synthesis **gas** to recover clean **liquid condensate** for use in a gasification unit (claimed).

ADVANTAGE - The apparatus removes enough quantity of the gaseous impurities and particulates so as to allow the general use of the reclaimed water in place of fresh **water** in **gasification** subsystems that would otherwise require a source of fresh water.

DESCRIPTION OF DRAWING(S) - The figure shows synthesis gas generated by a partial oxidation reaction occurring in synthesis gas generator or gasifier.

Synthesis gas generator (10)
Scrubber (20)
Heat exchanger (30)
Knock-out drum (40)
Control valving (56)
pp; 7 DwgNo 1/1

43/3,AB/7 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015950693
WPI Acc No: 2004-108534/200411
XRAM Acc No: C04-044362
Preparation of hydrocarbon involves reacting carbon monoxide and hydrogen partially in reactor comprising catalyst, absorbing generated heat by cooling **fluid**, **removing water**, and reacting unconverted feed in further stages
Patent Assignee: SHELL INT RES MIJ BV (SHEL)
Inventor: CALIS H P A; GROENEVELD M J; VERBIST G L M M
Number of Countries: 103 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200402927	A1	20040108	WO 2003EP6449	A	20030618	200411	B
AU 2003279683	A1	20040119	AU 2003279683	A	20030618	200447	

Priority Applications (No Type Date): EP 2002254499 A 20020626
Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
WO 200402927 A1 E 32 C07C-001/04
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
AU 2003279683 A1 C07C-001/04 Based on patent WO 200402927

Abstract (Basic): WO 200402927 A1

Abstract (Basic):

NOVELTY - A portion of carbon monoxide and hydrogen are reacted catalytically in reactor (I). The heat generated during reaction is absorbed by cooling fluid (CF). A stream from reactor (I), is cooled and **water** is **removed**. The obtained stream is further reacted similarly in reactor (II) or series of reactors. A stream comprising HC, water, unconverted hydrogen and CF, is withdrawn from last reactor for preparing hydrocarbon.

DETAILED DESCRIPTION - A gas comprising carbon monoxide (CO) and hydrogen (H2) is introduced into a reactor (I) comprising catalyst. A cooling fluid is further introduced into the reactor (I). A portion of CO and H are partially reacted catalytically in the reactor (I) for forming hydrocarbon and water, during which heat generates. The generated heat is directly absorbed by the cooling fluid. A stream consisting of hydrocarbon, water, unconverted feed and cooling fluid, is withdrawn from the reactor (I). The withdrawn stream is cooled and **water** is optionally **removed** from the stream. The obtained stream is further introduced into reactor (II) or series of reactors comprising catalyst. The cooling fluid and hydrogen are optionally introduced, and the above steps are repeated in the series of reactors. A stream comprising hydrocarbon, water, unconverted hydrogen and cooling fluid, is withdrawn from the last reactor for preparing hydrocarbon at elevated temperature and pressure.

An INDEPENDENT CLAIM is also included for reactor for preparing hydrocarbons.

USE - For preparing hydrocarbons, preferably liquid hydrocarbon such as methanol.

ADVANTAGE - The method of preparing hydrocarbon is inexpensive, compact and highly efficient. The method has high selectivity, thermal efficiency, carbon monoxide conversion, low pressure drop and improved heat transfer characteristics. The method does not require complicated and expensive equipments. The scaling up of fixed bed reactor in the process is simple.

pp; 32 DwgNo 0/0

43/3,AB/8 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014234253
WPI Acc No: 2002-054951/200207
Related WPI Acc No: 2003-467545
XRAM Acc No: C02-015616
XRPX Acc No: N02-040538
Oil refining system comprises vortex separator, vortex vapor generator and vortex vapor condenser

Patent Assignee: TIKHONOV V B (TIKH-I); ZHURIN V V (ZHUR-I)
Inventor: TIKHONOV V B; ZHURIN V V
Number of Countries: 021 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010046460	A1	20011129	US 2000174687	P	20000106	200207 B
			US 2000746337	A	20001220	
WO 200251964	A2	20020704	WO 2001US45707	A	20011205	200250

Priority Applications (No Type Date): US 2000174687 P 20000106; US 2000746337 A 20001220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010046460	A1		21	C10G-051/04	Provisional application US 2000174687
WO 200251964	A2	E		C10G-009/00	

Designated States (National): JP
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Abstract (Basic): US 20010046460 A1
Abstract (Basic):

NOVELTY - An oil refining system comprises a vortex separator for separation of oil from satellite **gases, water** and **dissolved** in crude oil salts; vortex vapor generators providing intensive process of evaporation in volume of **rotating liquid**; and vortex **vapor** condenser for gas products of oil distillation with corresponding cooling system.

DETAILED DESCRIPTION - An oil refining system comprises (a) a unit of preliminary oil purification from mixtures, **water** and satellite **gases** contained in crude oil; and a second unit for deep oil separation for fractions consisting of consecutive stages of heating, evaporation of initial oil and residual products of thermal separation. The unit of preliminary oil purification includes a reservoir (1) or pipeline with crude oil; pump (2) for crude oil supply into a vortex separator for separation of oil from water and other mixtures; a coarse filter (3) for purification from mechanical mixtures; a heat exchanger for preliminary heating of crude oil with a purpose of reducing viscosity of the crude oil; a vortex separator (4) for separation of oil from satellite **gases, water** and **dissolved** in crude oil salts; and pumps for oil supply to consecutive units for its separation for fractions and **water removal** into extraction systems for recovery of useful products. The second unit includes intermediate furnaces (10) or heat exchangers (9) for heating of initial product to temperatures corresponding to release of fraction of given composition (close to a boiling point of a particular fraction); vortex vapor generators (11, 11', 11) providing intensive process of evaporation in volume of **rotating liquid**; a pump utilized for extraction of evaporation products into condensers and transfer of unevaporated liquid into a consecutive stage of fraction separation; and a vortex vapor condenser (12, 12', 12) for gas products of oil distillation with corresponding **cooling** system. A **condensation** heat can be utilized for preliminary heating of crude oil or for intermediate stages of oil separation for fractions. **Liquid** products from vortex **vapor** condensers of separate stages are supplied by a pump into corresponding reservoirs.

INDEPENDENT CLAIMS are also included for;

(1) A vortex separator utilizing inertia forces of **rotating liquid** for separation of not purified crude oil from water and

other heavy mixtures;

(2) A vortex vapor generator utilizing inertia forces of **rotating liquid** for increase of oil vapor intensity output due to increase of up floating bubbles developed in a vortex vapor generator volume in a field of accelerating forces;

(3) A vortex vapor condenser of oil refinery products utilizing inertia forces of **rotating liquid** for a **condensation** of oil's different fractions;

(4) A two-zone combustion furnace for reducing energy spending and improvement of ecology of oil refining processes and permitting improvement of combustion of oil heavy fractions for a complete combustion with a decrease of solid particles output in outgoing gases comprising a first band of burners of light gases developing a first combustion zone with high temperature; and a second band of burners of heavy residue and gases providing additional combustion of unburned gases and solid particles; and

(5) A catalytic process in a catalytic vortex vapor generator.

USE - For separating crude oil from a mixture of crude oil and water and dissolved heavy mixtures and then separating the oil into fractions of different boiling points.

ADVANTAGE - The invention permits obtaining fine uniform oil products by both thermal distillation and cracking.

DESCRIPTION OF DRAWING(S) - The figure shows an oil refining system of the invention.

Reservoir (1)
Pump (2)
Coarse filter (3)
Vortex separator (4)
Heat exchangers (9)
Furnaces (10)
Vortex vapor generators (11, 11', 11)
Vortex vapor condenser (12, 12', 12)
pp; 21 DwgNo 1/7

43/3,AB/9 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013889221
WPI Acc No: 2001-373434/200139
XRAM Acc No: C01-114015

Coke dust reduction apparatus for decoking effluent from hydrocarbon cracking ovens comprises condenser, **liquid condensate collection** unit, filter and unit for washing residual gases

Patent Assignee: TECHNIP ITAL SPA (TECH-N)
Inventor: BELTRAME D; DI CINTIO R; PICCIOTTI M
Number of Countries: 028 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6203693	B1	20010320	US 99461180	A	19991214	200139	B
CA 2292242	A1	20010322	CA 2292242	A	19991214	200139	
EP 1087007	A2	20010328	EP 99830754	A	19991206	200139	
JP 2001098280	A	20010410	JP 200058384	A	20000303	200139	
IT 1308228	B	20011210	IT 99RM583	A	19990922	200237	

Priority Applications (No Type Date): IT 99RM583 A 19990922
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6203693	B1		9	C10G-009/16	

CA 2292242 A1 E C10G-009/16
EP 1087007 A2 E C10G-009/16
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2001098280 A 10 C10G-009/18
IT 1308228 B B01D-000/00

Abstract (Basic): US 6203693 B1
Abstract (Basic):
NOVELTY - Apparatus for reducing coke dust in decoking effluent from hydrocarbon cracking ovens comprises **condensation** unit, **liquid condensate collection** unit, unit for filtering liquid **condensate**, and unit for washing residual vapors and gases filtered from coke that cannot be condensed by **condensate**. The filtered **condensate** is discharged into atmosphere by evaporation using thermal energy of input decoking gas.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for coke dust reduction process in decoking effluents.

USE - For reducing coke dust in decoking effluent from hydrocarbon cracking ovens (claimed).

ADVANTAGE - The apparatus is simple, inexpensive, fully automatic, enables easy handling of filtered solids, consumes negligible amount of service **fluids**, completely **removes liquid effluent** (black **water** to be treated), and has favorable dimension. The collected coke is dried, has high content of graphitic carbon and can be used as coke dust. The apparatus is sturdy, flexible, resists corrosion, clogging and soiling by influence of solid separated from gas.

DESCRIPTION OF DRAWING(S) - The figure shows the orthothermal separator.

Pipes (4,5,9)
Line (8)
Vertical tube nest exchanger (E-1)
Cooler (E-2)
Filter (F-1)
Circulation pump (P-1)
Washing tower (T-1)
Horizontal tank (V-1)
-(v-5)) Valves ((v-1)
pp; 9 DwgNo 1/1

43/3,AB/10 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012299697
WPI Acc No: 1999-105803/199909
XRAM Acc No: C99-031584
Selective **gas** component **removal** from **fluid** e.g. natural **gas** - by reduction of swirling supersonic fluid stream to subsonic velocity using shock wave prior to component extraction
Patent Assignee: SHELL INT RES MIJ BV (SHEL)
Inventor: BETTING M; VAN VEEN J M H M; WILLINK C A T; TJEENK WILLINK C A; CORNELIS A; TJEENK W
Number of Countries: 084 Number of Patents: 017
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9901194	A1	19990114	WO 98EP4178	A	19980701	199909	B
ZA 9805706	A	19990331	ZA 985706	A	19980630	199918	

AU 9888570	A	19990125	AU 9888570	A	19980701	199923	
NO 9906546	A	19991229	WO 98EP4178	A	19980701	200017	
			NO 996546	A	19991229		
EP 1017465	A1	20000712	EP 98940153	A	19980701	200036	
			WO 98EP4178	A	19980701		
BR 9810386	A	20000905	BR 9810386	A	19980701	200048	
			WO 98EP4178	A	19980701		
AU 725574	B	20001012	AU 9888570	A	19980701	200055	
CN 1261814	A	20000802	CN 98806670	A	19980701	200058	
NZ 501454	A	20000929	NZ 501454	A	19980701	200060	
			WO 98EP4178	A	19980701		
MX 9911746	A1	20000601	MX 9911746	A	19991215	200133	
KR 2001014338	A	20010226	KR 99712489	A	19991229	200156	
JP 2002507152	W	20020305	WO 98EP4178	A	19980701	200220	
			JP 99506383	A	19980701		
EP 1017465	B1	20021106	EP 98940153	A	19980701	200281	
			WO 98EP4178	A	19980701		
DE 69809274	E	20021212	DE 98609274	A	19980701	200306	
			EP 98940153	A	19980701		
			WO 98EP4178	A	19980701		
ES 2186204	T3	20030501	EP 98940153	A	19980701	200341	
IL 133297	A	20031031	IL 133297	A	19980701	200406	
NO 317006	B1	20040719	WO 98EP4178	A	19980701	200453	
			NO 996546	A	19991229		

Priority Applications (No Type Date): EP 97202020 A 19970702

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9901194	A1	E	19	B01D-005/00	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

ZA 9805706	A		17	F25J-000/00	
AU 9888570	A				Based on patent WO 9901194
NO 9906546	A			B01D-000/00	
EP 1017465	A1	E		B01D-005/00	Based on patent WO 9901194

Designated States (Regional): BE DE DK ES FR GB IT NL

BR 9810386	A			B01D-005/00	Based on patent WO 9901194
AU 725574	B			B01D-005/00	Previous Publ. patent AU 9888570
					Based on patent WO 9901194
CN 1261814	A			B01D-005/00	
NZ 501454	A			B01D-005/00	Based on patent WO 9901194
MX 9911746	A1			B01D-005/00	
KR 2001014338	A			B01D-005/00	
JP 2002507152	W		15	B01D-053/24	Based on patent WO 9901194
EP 1017465	B1	E		B01D-005/00	Based on patent WO 9901194

Designated States (Regional): BE DE DK ES FR GB IT NL

DE 69809274	E			B01D-005/00	Based on patent EP 1017465
					Based on patent WO 9901194
ES 2186204	T3			B01D-005/00	Based on patent EP 1017465
IL 133297	A			B01D-005/00	Based on patent WO 9901194
NO 317006	B1			B01D-005/00	Previous Publ. patent NO 9906546

Abstract (Basic): WO 9901194 A

Removal of a selected **gaseous** component from a **fluid** stream is effected by cooling the stream to below the **condensation** or solidification **temperature** of the selected

component by passing the stream at supersonic velocity through a conduit equipped with a swirl device for imparting a swirling motion to the stream. The swirling motion causes the condensed or solidified particles to flow to a radially outer section of a collecting zone, from where they are extracted into an outlet stream after reducing the stream to subsonic velocity by creating a shock wave. Also claimed is a device for carrying out the above process.

USE - The process is useful for carbon dioxide **removal** from flue **gas**, **water removal** in air conditioning and 'drying' of natural gas (e.g. by removing ethane, propane, butane, pentane, hexane, heptane and/or octane) before distribution into a pipeline network.

ADVANTAGE - Separation efficiency is improved by collecting the particles after the shock wave since, under the resulting subsonic flow conditions, the centrifugal forces acting on the particles are counteracted by a lesser extent by the entraining effect of the centre of the stream, resulting in particle concentration in the radially outer section of the collecting zone.

Dwg.1/2

43/3,AB/11 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011695661
WPI Acc No: 1998-112571/199811
XRAM Acc No: C98-037030

Selective removal of a **vapour** from a **fluid** feed stream is efficient and low cost, useful for separating **water vapour** from organic **vapours** - by providing membrane having feed and permeate sides, for selection **removal** of **vapour** from **fluid** feed stream, countercurrent sweep is used that has particular partial pressure of vapour to be removed

Patent Assignee: BEND RES INC (BEND-N)
Inventor: FRIESEN D T; MCCRAY S B; NEWBOLD D D; RAY R J; RAY R K; RAY L A
Number of Countries: 030 Number of Patents: 016
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 824034	A2	19980218	EP 97306167	A	19970813	199811	B
ZA 9707245	A	19980429	ZA 977245	A	19970813	199822	
AU 9734142	A	19980219	AU 9734142	A	19970813	199824	
JP 10113531	A	19980506	JP 97219419	A	19970814	199828	
CA 2212835	A	19980214	CA 2212835	A	19970813	199829	
US 5843209	A	19981201	US 9624126	P	19960814	199904	
			US 97910409	A	19970813		
BR 9704365	A	19990323	BR 974365	A	19970814	199917	
KR 98018646	A	19980605	KR 9738614	A	19970813	199923	N
SG 56188	A1	19990118	SG 972914	A	19970812	199930	
MX 9706200	A1	19980501	MX 976200	A	19970814	200007	
IL 121538	A	19991231	IL 121538	A	19970813	200018	
US 6059857	A	20000509	US 9624126	P	19960814	200030	
			US 97910409	A	19970813		
			US 98199993	A	19981124		
AU 724534	B	20000921	AU 9734142	A	19970813	200050	
US 5843209	C1	20010515	US 97910409	A	19970813	200132	N
TW 450830	A	20010821	TW 97111587	A	19970813	200239	
PH 1199757573	B1	20000428	PH 57573	A	19970812	200309	

Priority Applications (No Type Date): US 9624126 P 19960814; US 97910409 A

19970813; KR 9738614 A 19970813; US 98199993 A 19981124

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 824034	A2	E	14	B01D-053/22	
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
ZA 9707245	A		32	B01D-000/00	
AU 9734142	A			B01D-061/36	
JP 10113531	A		10	B01D-053/22	
CA 2212835	A			B01D-053/22	
US 5843209	A		12	B01D-053/22	Provisional application US 9624126
BR 9704365	A			B01D-053/22	
KR 98018646	A			B01D-061/00	
SG 56188	A1			B01D-053/22	
MX 9706200	A1			B01F-003/00	
IL 121538	A			B01D-053/22	
US 6059857	A			B01D-053/22	Provisional application US 9624126 CIP of application US 97910409 CIP of patent US 5843209
AU 724534	B			B01D-061/36	Previous Publ. patent AU 9734142
US 5843209	C1			B01D-053/22	
TW 450830	A			B01D-053/22	
PH 1199757573	B1			B01D-053/22	

Abstract (Basic): EP 824034 A

Removal of a first **vapour** from a **fluid** feed stream containing a mixture of vapours, comprising:(a) providing a membrane having feed and permeate sides, that is selectively permeable to the first **vapour**; (b) directing the **fluid** feed stream to the feed side of the membrane and withdrawing a retentate stream depleted in the first vapour and a permeate stream enriched in the first vapour; and (c) directing a **gas**-phase **fluid** sweep stream to the permeate side of the membrane, flowing countercurrent to the flow of the fluid feed stream, wherein the partial pressure of the first vapour in the sweep stream is sufficiently low that the first vapour partial pressure ratio sweep stream:retentate stream is less than 0.9.

Also claimed is **removal** of **water vapour** from a **gas**-phase feed stream containing a mixture comprising **water** and organic **vapours** which comprise predominantly organic compounds with boiling points 0 - 200 deg. C, wherein the feed stream has **condensation temperature** above 40 deg. C at 1 atmosphere and is maintained at a **temperature** above the **condensation temperature**, and the feed stream pressure is 0 - 10 bar (gauge), comprising: (a) providing a hollow fibre module having feed and retentate ends and ports and at least 2 permeate ports, the hollow fibre module comprising hollow fibre membranes arranged substantially parallel to each other and sealed into a chamber, the hollow fibre membranes comprising a selective layer on a support layer; (b) directing the gas-phase feed stream to the feed port of the hollow fibre module, withdrawing a retentate stream depleted in **water vapour** from the retentate port, and withdrawing a permeate stream enriched in **water vapour** from a permeate port located near the feed end of the module; and (c) directing a **gas**-phase **fluid** sweep stream to a permeate port located near the retentate end of the module, flowing countercurrent to the gas-phase feed stream flow, wherein the **water vapour** partial pressure in the sweep stream is sufficiently low that the ratio **water vapour** partial pressure in the sweep stream:**water vapour** partial pressure in the retentate stream is less than 0.9.

USE - The process is useful for the separation of **water vapour** from organic **vapours** (claimed), removal of volatile compounds from water, and separation of organic and inorganic vapour mixtures.

ADVANTAGE - The process is efficient and low cost.

Dwg.0/10

43/3,AB/12 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010773102
WPI Acc No: 1996-270055/199628
XRPX Acc No: N96-226911

Fluid-operated compressor unit - has after-cooler in **fluid** separator **vent** line for recovery of **condensate** fed back to working fluid circuit

Patent Assignee: SIEMENS AG (SIEI)
Inventor: HOLZHEIMER G; SCHAEPERKLAUS B; WEIGL H
Number of Countries: 012 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 716232	A1	19960612	EP 95118467	A	19951123	199628	B
DE 29505608	U1	19960725	DE 95U2005608	U	19950331	199635	
JP 8232869	A	19960910	JP 95334137	A	19951129	199646	
US 5618164	A	19970408	US 95567662	A	19951205	199720	
EP 716232	B1	19970813	EP 95118467	A	19951123	199737	
DE 59500510	G	19970918	DE 500510	A	19951123	199743	
			EP 95118467	A	19951123		
ES 2106611	T3	19971101	EP 95118467	A	19951123	199750	
CN 1134518	A	19961030	CN 95120021	A	19951201	199803	
JP 3396572	B2	20030414	JP 95334137	A	19951129	200328	

Priority Applications (No Type Date): DE 95U2005608 U 19950331; DE 4443429 A 19941206

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 716232	A1	G	6	F04C-019/00	
Designated States (Regional): AT CH DE ES FR GB IT LI SE					
DE 29505608	U1		10	F04C-029/04	
JP 8232869	A		4	F04C-019/00	
US 5618164	A		4	F04C-019/00	
EP 716232	B1	G	6	F04C-019/00	
Designated States (Regional): AT CH DE ES FR GB IT LI SE					
DE 59500510	G			F04C-019/00	Based on patent EP 716232
ES 2106611	T3			F04C-019/00	Based on patent EP 716232
CN 1134518	A			F04C-019/00	
JP 3396572	B2		4	F04C-019/00	Previous Publ. patent JP 8232869

Abstract (Basic): EP 716232 A

The compressor unit (3) has a fluid machine (2) with an inlet opening (1) coupled to a suction line (4) and an outlet opening (5) coupled to a fluid separator (6). The **fluid** separator has a **vent** line (9) and a return line (11) leading back to the fluid machine, with an after-cooler (7) inserted in the vent line, allowing recovery of **condensate**, fed back to the working fluid circuit.

A further heat exchanger (10) may be inserted in the return line, with an associated fan (12) providing a cooling air stream, acting as a second after-**cooler** for returning **condensate** to the working

fluid circuit.

ADVANTAGE - **Condensate** recovery reduces working fluid usage rate.

Dwg.1/1

Abstract (Equivalent): EP 716232 B

Compression system which has the following features: a) a liquid ring machine (2) connected by means of its inlet aperture (1) to a suction line (4) and by means of its outlet aperture (5) to a liquid separator (6); b) an outlet air line (9) and a return line (11) which leads to the liquid ring machine (2) and serves for the return of operating liquid, are connected to the liquid separator (6); c) a first after-cooling device (7) having a primary and a secondary circuit, which after-cooling device is connected to the suction line (4) by means of its primary circuit and to the outlet air line (9) means of its secondary circuit; d) the **condensate** accumulating in the after-cooling device (7) is returned to the operating liquid circuit; characterised by the following further features: e) at least a second after-cooling device (8) is connected in series to the first after-cooling device (7) in the flow; f) the **condensate** accumulating in the further after-cooling device (8) is also returned to the operating liquid circuit.

Dwg.1/1

Abstract (Equivalent): US 5618164 A

A compressor assembly, comprising:

a suction line;

a storage tank;

a **liquid**-piston **rotary** compressor having an inlet port and an outlet port, the inlet port of said rotary compressor being coupled to said suction line and the outlet port of said rotary compressor being coupled to said storage tank;

an air-discharge line coupled to said storage tank;

a return line coupled to said storage tank, said return line recirculating operating liquid from said storage tank to said **liquid**-piston **rotary** compressor;

a first after-cooler device having a primary and a secondary zone, where said suction line is coupled to the primary zone of said first after-cooler device and said air-discharge line is coupled to the secondary zone of said first after-**cooler** device, such that **condensate** produced in said first after-cooler device is recirculated as operating liquid in said compressor assembly;

a second after-cooler device coupled to said first after-cooler device and having primary zone and a secondary zone, such that **condensate** being produced in the second after-cooler device is recirculated as operating liquid in said compressor assembly, said second after-cooler device being arranged upstream, in terms of air discharge flow, from said first after-cooler device; and

a third after-cooler device having a primary zone and a secondary zone, where the secondary zone of said third after-cooler device is coupled to the secondary zone of said first and second after-cooler device, and the primary zone of third after-cooler device is connected to the air-discharge line of the secondary zone of said first after-cooler device.

Dwg.1/1

43/3,AB/13 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

008865571

WPI Acc No: 1991-369597/199151
XRPX Acc No: N91-282949
Air dryer e.g. for air conditioner in large building - passes air through heat exchanger with cooling fluid cooled using domestic **water** supply and **removes condensation**
Patent Assignee: ECONO AIR DRYER MFG (ECON-N)
Inventor: LOVERIDGE E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
CA 1291703	C	19911105	CA 581108	A	19881025	199151	B

Priority Applications (No Type Date): CA 581108 A 19881025

Abstract (Basic): CA 1291703 C
Gas is passed through a first heat exchanger in contact with cooling **fluid**. **Water vapour** in the **gas** forms **condensate**. The **cooling** fluid is maintained at a temp. as close as possible to that of a local domestic water supply by heat exchange with it by passing all the domestic water supply through a second heat exchanger in heat exchange contact with the cooling fluid.
When the temp. of the cooling fluid is above a set min. temp. part of the domestic water supply already passed through the second heat exchanger is passed through a third heat exchanger. The third heat exchanger is in heat exchange contact with the cooling fluid, and in heat exchange contact with the gas within the first heat exchanger. In a second step, the **condensate** is removed from the first heat exchanger.
USE/ADVANTAGE - Air drying systems. Keeps air used for pneumatic control systems which control e.g. heating and cooling systems in large buildings, dry. Prevents **condensation** causing breakdowns. (28pp Dwg.No.1/7)

43/3,AB/14 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX

003072492
WPI Acc No: 1981-H2531D/198131
Cleaning gas insulated region of electrical appts. - using insulating cleaning **fluid** that can be **removed**, filtered and recycled, introduced in vapour form during electrical operation
Patent Assignee: ELEC POWER RES INST (ELPP)
Inventor: HINGORANI N G
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4278832	A	19810714				198131	B

Priority Applications (No Type Date): US 7989268 A 19791029
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4278832	A		4		

Abstract (Basic): US 4278832 A
A sealed environment such as in a gas insulated electrical substance is cleaned by introducing a cleansing **fluid** in **vapor** form into the environment and condensing the vapor on surfaces within the environment. The condensed **fluid** is then

removed and filtered to extact contaminants such as particulate matter.

The cleansing fluid can be continuously introduced or periodically introduced during the cleaning process. By selecting a cleansing fluid with electrical insulating properties and a vaporization **temperature** lower than the **condensation temperature** of the gas insulation, electrical apparatus can be cleaned during normal operation of the apparatus.

1

43/3,AB/15 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

000934089
WPI Acc No: 1973-11314U/197309
Drying of natural gas - before liquefaction and storage by injecting solvent,**cooling** and removing **condensate**
Patent Assignee: KNAPP H (KNA -I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 1794353	A					197309 B

Priority Applications (No Type Date): DE 1794353 A 19670415

Abstract (Basic): DE 1794353 A

Water is **removed** from natural gas before low-temp. washing with organic solvent to remove CO2, liquefaction and storage, by injecting a small amount of **solvent** into the pressurised **gas** stream, while still above freezing point of the **water vapour**, and after further cooling, removing the solvent and condensed water. The injected solvent is water-miscible, pref. methanol or acetone, and can be subsequently recovered by distillation. Ice formation in the subsequent gas coolers connected to the CO2 absorption unit is prevented without the need for a separate water adsorption plant.

43/3,AB/16 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

08019905
UTILITY WATER TREATMENT SYSTEM FOR **WATER VAPOR** COMPRESSION REFRIGERATOR

PUB. NO.: 2004-132664 [JP 2004132664 A]
PUBLISHED: April 30, 2004 (20040430)
INVENTOR(s): HONGO MASARU
APPLICANT(s): SANKEN SETSUBI KOGYO CO LTD
APPL. NO.: 2002-299770 [JP 2002299770]
FILED: October 15, 2002 (20021015)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a technology for eliminating the damage cause of a compressor provided inside a **water vapor** compression refrigerator and reducing the drain blow quantity for controlling water quality.

SOLUTION: The **water vapor** compression refrigerator 14 is provided with an evaporator 14a, a compressor 14b and a condenser 14c. The evaporator 14a guides feed water 16 and circulation water 17 from utility water treatment equipment 15 interposed on a feed water line L as cooled water 14d and evaporates a part of the cooled water 14d. The condenser 14c introduces **water vapor** compressed and heated at the compressor 14b and **cools** and **condensates** the **vapor** using **cooling water** 19 guided from a cooling tower 18 provided outside. The water treatment equipment 15 eliminates the damage cause of the compressor 14b and reduces the drain blow quantity for controlling water quality of the circulation **water** 17 by **removing** scale components such as calcium contained in the feed water 16 and by pure water treatment or distilled water treatment.

48/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

7003704 INSPEC Abstract Number: A2001-18-0530-009
Title: Anomalous rotational properties of Bose-Einstein condensates in asymmetric traps
Author(s): Garcia-Ripoll, J.J.; Perez-Garcia, V.M.
Author Affiliation: Dept. de Matematicas, Univ. de Castilla-La Mancha, Ciudad, Spain
Journal: Physical Review A (Atomic, Molecular, and Optical Physics) vol.64, no.1 p.013602/1-7
Publisher: APS through AIP,
Publication Date: July 2001 Country of Publication: USA
CODEN: PLRAAN ISSN: 1050-2947
SICI: 1050-2947(200107)64:1L.1:ARPB;1-D
Material Identity Number: N687-2001-005
U.S. Copyright Clearance Center Code: 1050-2947/2001/64(1)/013602(7)/$20.00
Language: English
Abstract: We study the rotational properties of a Bose-Einstein **condensate** confined in a **rotating** harmonic trap for different trap anisotropies. With simple arguments, we obtain the velocity field of the quantum fluid for condensates with or without a centered vortex. While the bosons describe open spiraling trajectories, on the frame of reference of the **rotating trap**, the **fluid moves** against the **trap**'s rotation. We also find expressions for the angular momentum of linear and Thomas-Fermi solutions for a vortexless state. In these two limits we find the same analytic relation between the shape of the cloud and the rotation speed. Our predictions are supported by numerical simulations of the mean-field Gross-Pitaevskii model and by current experiments with **rotating** Bose-Einstein **condensates** (K. W. Madison, F. Chevy, V. Bretin, and J. Dalibard, e-print cond-mat/0101051).
Subfile: A

48/3,AB/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09809385 Genuine Article#: 449XA Number of References: 29
Title: Anomalous rotational properties of Bose-Einstein condensates in asymmetric traps - art. no. 013602 (ABSTRACT AVAILABLE)
Author(s): Garcia-Ripoll JJ (REPRINT) ; Perez-Garcia VM
Corporate Source: Escuela Tecn Super Ingn Ind,Dept Matemat,Ciudad Real 13071//Spain/ (REPRINT); Escuela Tecn Super Ingn Ind,Dept Matemat,Ciudad Real 13071//Spain/
Journal: PHYSICAL REVIEW A, 2001, V6401, N1 (JUL), P3602-+
ISSN: 1050-2947 Publication date: 20010700
Publisher: AMERICAN PHYSICAL SOC, ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA
Language: English Document Type: ARTICLE
Abstract: We study the rotational properties of a Bose-Einstein **condensate** confined in a **rotating** harmonic trap for different trap anisotropies. With simple arguments, we obtain the velocity field of the quantum fluid for condensates with or without a centered vortex. While the bosons describe open spiraling trajectories, on the frame of reference of the **rotating trap**, the **fluid moves** against the **trap**'s rotation. We also find

expressions for the angular momentum of linear and Thomas-Fermi solutions for a vortexless state. In these two limits we find the same analytic relation between the shape of the cloud and the rotation speed. Our predictions are supported by numerical simulations of the mean-field Gross-Pitaevskii model and by current experiments with **rotating** Bose-Einstein **condensates** (K. W. Madison, F. Chevy, V. Bretin, and J. Dalibard, e-print cond-mat/0101051).

48/3,AB/3 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

16028195 PASCAL No.: 03-0175348
Measuring the **Condensate** Fraction of Rapidly **Rotating** Trapped Boson Systems: Off-Diagonal Order from the Density Profile
SINOVA Jairo; HANNA C B; MACDONALD A H
Department of Physics, University of Texas at Austin, Austin, Texas 78712-1081; Department of Physics, Boise State University, Boise, Idaho 83725-1570
Journal: Physical review letters, 2003-03-28, 90 (12) 120401-120401-4
Language: English
We demonstrate a direct connection between the density profile of a system of ultracold trapped bosonic particles in the rapid-**rotation** limit and its **condensate** fraction. This connection can be used to probe the crossover from condensed vortex-lattice states to uncondensed quantum-fluid states that occurs in rapidly rotating boson systems as the particle density decreases or the rotation frequency increases. We illustrate our proposal with a series of examples, including ones based on models of realistic finite trap systems, and comment on its application to freely expanding boson density profile measurements.

48/3,AB/4 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

15111820 PASCAL No.: 01-0272332
Anomalous rotational properties of Bose-Einstein condensates in asymmetric traps
GARCIA RIPOLL Juan J; PEREZ GARCIA Victor M
Departamento de Matematicas, Escuela Tecnica Superior de Ingenieros Industriales, Universidad de Castilla-La Mancha, 13071 Ciudad Real, Spain
Journal: Physical review. A, 2001-07, 64 (1) 013602-013602-7
Language: English
We study the rotational properties of a Bose-Einstein **condensate** confined in a **rotating** harmonic trap for different trap anisotropies. With simple arguments, we obtain the velocity field of the quantum fluid for condensates with or without a centered vortex. While the bosons describe open spiraling trajectories, on the frame of reference of the **rotating trap**, the **fluid moves** against the **trap**<right single quotation mark>s rotation. We also find expressions for the angular momentum of linear and Thomas-Fermi solutions for a vortexless state. In these two limits we find the same analytic relation between the shape of the cloud and the rotation speed. Our predictions are supported by numerical simulations of the mean-field Gross-Pitaevskii model and by current experiments with **rotating** Bose-Einstein **condensates** (K. W. Madison, F. Chevy, V. Bretin, and J. Dalibard,

e-print cond-mat/0101051).

48/3;AB/5 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012544876
WPI Acc No: 1999-350982/199930
XRAM Acc No: C99-103582
Liquid distillation unit - has rotatable stir vane provided for stirring liquid stored in heating pot
Patent Assignee: KONICA CORP (KONS)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 11128601	A	19990518	JP 97300534	A	19971031	199930	B

Priority Applications (No Type Date): JP 97300534 A 19971031
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11128601	A		11	B01D-001/00	

Abstract (Basic): JP 11128601 A
NOVELTY - A rotatable stir vane (47) is provided for stirring the liquid (11) stored in the heating pot (10). A pipe (30) is arranged connecting the condensate collector (70) to the heating pot, for passing vapor. A ventilation unit is provided for circulating gas between the condensate collector and heating pot. DETAILED DESCRIPTION - A heater (20) is provided for heating the liquid stored in the pot. The cooling unit is used for cooling the vapor generated from the heating pot.
USE - For distillation of liquid.
ADVANTAGE - The evaporation efficiency is improved since the suspended matter in liquid, as stirred well. DESCRIPTION OF DRAWING(S) - The figure shows **block** diagram of **liquid** distillation unit. (10) Heating pot; (11) **Liquid**; (30) Pipe; (47) **Rotatable** stir vane; (70) **Condensate** collector.
Dwg.1/6

48/3;AB/6 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

000669283
WPI Acc No: 1970-05727R/197005
Moving band ice maker with lubricant purification
Patent Assignee: CROSBY FIELD (FIE -I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 3491543	A					197005	B

Priority Applications (No Type Date): US 67691055 A 19671215; US 708118 A 19700121

Abstract (Basic): US 3491543 A

A flexible steel belt is stretched by horizontal drive and tension rollers to an inclined elongated oval whereby it is held in contact with grooved evaporator surfaces facing opposite ways within the belt loop. The upper bow of the belt moves upwards and the lower bow downwards. Super-cooled water or other fluid to be congealed flows onto the upper bow and is sprayed on the underface of the lower bow which is enclosed in a channel. Between the belt and the evaporators a heat conducting lubricant is circulated to improve heat transfer. To the edge of the belt is bonded a flexible rubber rim to **retain** the **cooled liquid** and the lubricant on their respective faces. Any uncongealed liquid is blown away from the solid at the bottom of the loop and recirculated.

The lubricant accumulating within the loop at the lower end is guided by spiral grooves at the ends of the rollers into cups from which it is poured onto a stationary collecting tray as the roller **rotates**. The **water** of **condensation** that dilutes the lubricant is boiled away in a thermostatically controlled heater with condenser to prevent escape of the lubricant.

54/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014234253
WPI Acc No: 2002-054951/200207
Related WPI Acc No: 2003-467545
XRAM Acc No: C02-015616
XRPX Acc No: N02-040538
Oil refining system comprises vortex separator, vortex vapor generator and vortex vapor condenser
Patent Assignee: TIKHONOV V B (TIKH-I); ZHURIN V V (ZHUR-I)
Inventor: TIKHONOV V B; ZHURIN V V
Number of Countries: 021 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010046460	A1	20011129	US 2000174687	P	20000106	200207 B
			US 2000746337	A	20001220	
WO 200251964	A2	20020704	WO 2001US45707	A	20011205	200250

Priority Applications (No Type Date): US 2000174687 P 20000106; US 2000746337 A 20001220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010046460	A1		21	C10G-051/04	Provisional application US 2000174687
WO 200251964	A2	E		C10G-009/00	

Designated States (National): JP
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Abstract (Basic): US 20010046460 A1
Abstract (Basic):

NOVELTY - An oil refining system comprises a vortex separator for separation of oil from satellite gases, water and dissolved in crude oil salts; vortex vapor generators providing intensive process of evaporation in volume of **rotating liquid**; and vortex vapor condenser for gas products of oil distillation with corresponding cooling system.

DETAILED DESCRIPTION - An oil refining system comprises (a) a unit of preliminary oil purification from mixtures, water and satellite gases contained in crude oil; and a second unit for deep oil separation for fractions consisting of consecutive stages of heating, evaporation of initial oil and residual products of thermal separation. The unit of preliminary oil purification includes a reservoir (1) or pipeline with crude oil; pump (2) for crude oil supply into a vortex separator for separation of oil from water and other mixtures; a coarse filter (3) for purification from mechanical mixtures; a heat exchanger for preliminary heating of crude oil with a purpose of reducing viscosity of the crude oil; a vortex separator (4) for separation of oil from satellite gases, water and dissolved in crude oil salts; and pumps for oil supply to consecutive units for its separation for fractions and **water removal** into extraction systems for recovery of useful products. The second unit includes intermediate furnaces (10) or heat exchangers (9) for heating of initial product to temperatures corresponding to release of fraction of given composition (close to a boiling point of a particular fraction); vortex vapor generators (11, 11', 11) providing intensive process of evaporation in volume of **rotating liquid**; a pump utilized for extraction of evaporation products into condensers and transfer of unevaporated

liquid into a consecutive stage of fraction separation; and a vortex vapor condenser (12, 12', 12) for gas products of oil distillation with corresponding **cooling** system. A **condensation** heat can be utilized for preliminary heating of crude oil or for intermediate stages of oil separation for fractions. Liquid products from vortex vapor condensers of separate stages are supplied by a pump into corresponding reservoirs.

INDEPENDENT CLAIMS are also included for;

(1) A vortex separator utilizing inertia forces of **rotating liquid** for separation of not purified crude oil from water and other heavy mixtures;

(2) A vortex vapor generator utilizing inertia forces of **rotating liquid** for increase of oil vapor intensity output due to increase of up floating bubbles developed in a vortex vapor generator volume in a field of accelerating forces;

(3) A vortex vapor condenser of oil refinery products utilizing inertia forces of **rotating liquid** for a **condensation** of oil's different fractions;

(4) A two-zone combustion furnace for reducing energy spending and improvement of ecology of oil refining processes and permitting improvement of combustion of oil heavy fractions for a complete combustion with a decrease of solid particles output in outgoing gases comprising a first band of burners of light gases developing a first combustion zone with high temperature; and a second band of burners of heavy residue and gases providing additional combustion of unburned gases and solid particles; and

(5) A catalytic process in a catalytic vortex vapor generator.

USE - For separating crude oil from a mixture of crude oil and water and dissolved heavy mixtures and then separating the oil into fractions of different boiling points.

ADVANTAGE - The invention permits obtaining fine uniform oil products by both thermal distillation and cracking.

DESCRIPTION OF DRAWING(S) - The figure shows an oil refining system of the invention.

Reservoir (1)
Pump (2)
Coarse filter (3)
Vortex separator (4)
Heat exchangers (9)
Furnaces (10)
Vortex vapor generators (11, 11', 11)
Vortex vapor condenser (12, 12', 12)
pp; 21 DwgNo 1/7

54/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012235684
WPI Acc No: 1999-041791/199904
XRPX Acc No: N99-031610

Air ejection system of steam turbine plant - has vapour ejector arranged in parallel to air ejector which is coupled in series to **water** sealing **rotating** type vacuum pump for independent operation of vacuum pump

Patent Assignee: HITACHI LTD (HITA)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week

JP 10299418 A 19981110 JP 97105713 A 19970423 199904 B

Priority Applications (No Type Date): JP 97105713 A 19970423
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
JP 10299418 A 5 F01K-009/02

Abstract (Basic): JP 10299418 A

The system consists of a condenser (1) connected to an exhaust of a steam turbine for performing **cooling condensation**. A **water** sealing **rotating** type vacuum pump (6) is provided in the condenser for evacuating air.

An air ejector (5) is coupled in series to the **water** sealing **rotating** type vacuum pump through an air extraction tube (2) interposed between the condenser and water sealing vacuum pump. A vapour ejector (4) is installed in parallel to the air ejector for independent operation of the **water** sealing **rotation** type vacuum pump.

ADVANTAGE - Offers reliable air ejection system. Improves running continuation property of air extraction system.

Dwg.1/3

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SYSTEM:OS  - DIALOG OneSearch
  File   2:INSPEC 1969-2004/Sep W1
         (c) 2004 Institution of Electrical Engineers
*File   2: Alert feature enhanced for multiple files, duplicates
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  File   6:NTIS 1964-2004/Sep W2
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  File   8:Ei Compendex(R) 1970-2004/Sep W1
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  File  34:SciSearch(R) Cited Ref Sci 1990-2004/Sep W2
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removal, customized scheduling.  See HELP ALERT.
  File 315:ChemEng & Biotec Abs 1970-2004/Aug
         (c) 2004 DECHEMA
  File 350:Derwent WPIX 1963-2004/UD,UM &UP=200459
         (c) 2004  Thomson Derwent
*File 350: For more current information, include File 331 in your search.
Enter HELP NEWS 331 for details.
  File 347:JAPIO Nov 1976-2004/May(Updated 040903)
         (c) 2004 JPO & JAPIO
*File 347: JAPIO data problems with year 2000 records are now fixed.
Alerts have been run.  See HELP NEWS 347 for details.
  File 344:Chinese Patents Abs Aug 1985-2004/May
         (c) 2004 European Patent Office
  File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
*File 371: This file is not currently updating. The last update is 200209.
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Set	Items	Description
S1	154	AU=(BROYLES, R? OR BROYLES R?)
S2	2368	AU=(BERMAN, M? OR BERMAN M?)
S3	1	S1 AND S2
S4	2521	S1:S2
S5	2520	S4 NOT S3
S6	0	S5 AND ((ROTAT?????? OR ROTAR? OR PIVOT?????? OR SWING????-?? OR INCLIN?????? OR TURN?????? OR TILT?????? OR ORBIT? OR R-EVOLV?)(3N)CONDENSAT?)
S7	0	S5 AND CONDENSAT?(3N)(TRAP??? OR TEMPERATUR? OR COLD OR CO-OL?)
S8	5	S5 AND (LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE - OR AQUAS OR H2O OR WATER??)(3N)(TRAP???? OR SEAL?? OR BLOCK? - OR RETAIN? OR ACCUMULAT? OR COLLECT? OR GATHER? OR REMOV? OR - MOVE??? OR ROTAT? OR ROTAR? OR PIVOT?????? OR SWING??...
S9	5	RD (unique items)
S10	19	S5 AND (LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE - OR AQUAS OR H2O OR WATER??)(3N)(GAS OR GASES OR GASEOUS? OR G-ASIF? OR VAPOR? OR VAPOUR? OR FUME? OR FUMING? OR EFFLUV? OR - EFFLUENT? OR EFFUS? OR EFFLUX? OR VENT? OR DISCHARG? O...
S11	11	RD (unique items)
S12	11	S11 NOT S9

3/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015766483
WPI Acc No: 2003-828685/200377
XRPX Acc No: N03-661986
Semiconductor wafer processing chamber operation method for semiconductor device manufacture, involves collecting water vapor generated during semiconductor wafer process, in water vapor trap as by-product
Patent Assignee: LSI LOGIC CORP (LSIL-N)
Inventor: **BERMAN M J; BROYLES R D**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6630411	B1	20031007	US 2002140536	A	20020507	200377	B

Priority Applications (No Type Date): US 2002140536 A 20020507
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6630411	B1		13	H01L-021/31	

Abstract (Basic): US 6630411 B1
Abstract (Basic):
NOVELTY - A water vapor trap (38) installed in a wafer processing chamber (12), is heated to a temperature of 77 K. A semiconductor wafer (28) held by a wafer holder (30), is processed using a process gas, and the generated water vapor is collected in the water vapor trap, as a by-product.
USE - For operating semiconductor wafer processing chamber used for manufacturing semiconductor device e.g. semiconductor integrated circuit (IC).
ADVANTAGE - The water vapor generated during the wafer processing time, is collected in the water vapor trap, hence the water vapor collected in the processing chamber is reliably removed.
DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the semiconductor wafer processing apparatus.
processing chamber (12)
processing head (14)
process gas inlet (16)

9/3,AB/1 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

0857933 NTIS Accession Number: NUREG/CR-1509/XAB
Light Water Reactor Safety Research Program
(Quarterly rept. Jan-Mar 80)
Berman, M.
Sandia National Labs., Albuquerque, NM.
Corp. Source Codes: 068123000
Sponsor: Nuclear Regulatory Commission, Washington, DC. Div. of Reactor Safety Research.
Report No.: SAND-80-1304/1OF4
Sep 80 143p
Languages: English
Journal Announcement: GRAI8103
See also report for Oct-Dec 79, NUREG/CR-1460.
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NTIS Prices: PC A07/MF A01
The Molten Fuel Concrete Interactions (MFCI) study is comprised of experimental and analytical investigations of the chemical and physical phenomena associated with interactions between molten core materials and concrete. Such interactions are possible during hypothetical fuel-melt accidents in light water reactors (LWRs) when molten fuel and steel from the reactor core penetrate the pressure vessel and cascade onto the concrete substructure. The purpose of the MFCI study is to develop an understanding of these interactions suitable for risk assessment. Emphasis is placed on identifying and investigating the dominant interaction phenomena occurring between prototypic materials. The table of contents is the following: Molten fuel concrete interactions study; Steam explosion phenomena; Separate effects tests for TRAP code development; and Containment emergency sump performance.

9/3,AB/2 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05959543
E.I. No: EIP01506764216
Title: A towed body sampler for monitoring marine ecosystems
Author: **Berman, M.S.**; Sherman, K.
Corporate Source: NOAA National Marine Fisheries Service Northeast Fisheries Science Center, Narragansett, Rhode Island, United States
Source: Sea Technology v 42 n 9 September. p 48-52
Publication Year: 2001
ISSN: 0093-3651
Language: English
Abstract: The Nv-Shuttle, because of its large payload and ability to undulate through the **water** column, simultaneously **collects** a biological and physical data set pertinent to measuring changing ecological conditions affecting the productivity of marine waters. The configuration described here was designed to examine the parameters most important to the lower trophic levels in Narragansett Bay, but the flexibility of the system would allow it to be reconfigured for the specific needs of a different system. For example, there are several commercially available nutrient samplers designed for use in towed bodies,

which would be useful to evaluate nitrate or phosphate reduction programs. There are, however, some limitations to the system. 5 Refs.

9/3,AB/3 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012470039
WPI Acc No: 1999-276147/199923
XRAM Acc No: C99-081067
XRPX Acc No: N99-206897
Ethylene glycol corrosion inhibitor used during cleaning after chemical-mechanical polishing
Patent Assignee: LSI LOGIC CORP (LSIL-N)
Inventor: **BERMAN M J**; KALPATHY-CRAMER J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5893756	A	19990413	US 97918483	A	19970826	199923	B

Priority Applications (No Type Date): US 97918483 A 19970826
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5893756	A		8	H01L-021/00	

Abstract (Basic): US 5893756 A
Abstract (Basic):
NOVELTY - A partially fabricated IC substrate with a metallic plug formed by chemical-mechanical polishing of a metal surface of the substrate is scrubbed in the presence of a mixture of ethylene glycol and hydrofluoric acid to remove at least part of the contaminated dielectric layer. The amount of ethylene glycol is 2-7 times the amount of HF, and effectively inhibits corrosion of the metallic plug.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the composition used.
USE - To inhibits corrosion of the metallic plug in an IC.
ADVANTAGE - The ethylene glycol effectively inhibits corrosion of the metallic plug (claimed).
DESCRIPTION OF DRAWING(S) - The drawing shows a flow chart of a post tungsten chemical-mechanical polishing cleaning process.
pp; 8 DwgNo 3/3

9/3,AB/4 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009121926
WPI Acc No: 1992-249363/199230
XRAM Acc No: C92-111251
Appts. for producing elongate strip - includes extrusion die to form blown tube and cutter to cut tube into strip
Patent Assignee: MINNESOTA MINING & MFG CO (MINN)
Inventor: AKSELROD A; **BERMAN M A**; CYSEWSKI J B; LENIUS S J; LOUKS J W ; OSTEN D W; PETRIN J W; SWANSON R P; WILL E; AKSELORD A
Number of Countries: 038 Number of Patents: 010
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5128076	A	19920707	US 91673285	A	19910321	199230	B

WO 9216359	A1	19921001	WO 92US2034	A	19920309	199242
AU 9216548	A	19921021	AU 9216548	A	19920309	199303
			WO 92US2034	A	19920309	
CN 1065037	A	19921007	CN 92101895	A	19920321	199324
EP 575542	A1	19931229	EP 92909222	A	19920309	199401
			WO 92US2034	A	19920309	
JP 6506164	W	19940714	JP 92508800	A	19920309	199432
			WO 92US2034	A	19920309	
TW 258687	A	19951001	TW 92101973	A	19920316	199550
EP 575542	B1	19960508	EP 92909222	A	19920309	199623
			WO 92US2034	A	19920309	
DE 69210590	E	19960613	DE 610590	A	19920309	199629
			EP 92909222	A	19920309	
			WO 92US2034	A	19920309	
ES 2086738	T3	19960701	EP 92909222	A	19920309	199633

Priority Applications (No Type Date): US 91673285 A 19910321

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5128076	A		9	B29C-047/92	
WO 9216359	A1	E	48	B29C-069/00	
Designated States (National): AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO PL RO RU SD SE					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL OA SE					
AU 9216548	A			B29C-069/00	Based on patent WO 9216359
EP 575542	A1	E		B29C-069/00	Based on patent WO 9216359
Designated States (Regional): DE ES FR GB IT					
JP 6506164	W		15	B29C-055/28	Based on patent WO 9216359
EP 575542	B1	E	27	B29C-069/00	Based on patent WO 9216359
Designated States (Regional): DE ES FR GB IT					
DE 69210590	E			B29C-069/00	Based on patent EP 575542
					Based on patent WO 9216359
ES 2086738	T3			B29C-069/00	Based on patent EP 575542
CN 1065037	A			B29C-055/28	
TW 258687	A			B29C-047/00	

Abstract (Basic): US 5128076 A

Appts. comprises an extrusion die to form a tube. The tube is expanded by air prssure, and a constraining device controls the tube dia. before solidifying. A transport mechanism with rollers, engages the outside of the tube and pulls the tube without distortion. A **fluid seal seals** the tube cavity. A stationary cuter cuts the open tube into a strip, as the die and tube rotate.

Pref., polyethylene is extruded from the extruders and the annular orifice of the rotating die to form an open-ended tube. The tube is expanded by air pressure issuing through the die. A transport mechanism having rollers rotates in synchronism with the die and pulls the tube without distortion. The dia. of the tube is controlled by a stationary microporous ring which forms an air layer about the sleeve. The tube is pulled over a lip seal which maintains the pressure in the tube. The tube then floats over an air bearing mandrel, and is cut into a strip by a stationary single bladed knife.

USE/ADVANTAGE - The arrangement avoids the problems associated with closed-nip processes, i.e. wrinkles and permanent folds. Adhesive coated tape is produced

Dwg. 1/10

Abstract (Equivalent): EP 575542 B

An appts. (10) for producing an elongate strip (12) of material comprising: (1) an extrusion die (14) for continuously extruding a

flowable material in a downline direction to form a tube (16) with a generally cylindrical central longitudinal cavity (60); (2) tube pressurising means (110) for controlling fluid pressure in the central longitudinal cavity (60); (3) means for controlling the diameter of the tube (16) located to cause the tube (16) to reach its final size before solidifying within the controlling means; (4) a transport mechanism (28) engaging and pulling the tube (16) in the downline direction without distorting or closing the tube (16) while allowing access to the central longitudinal cavity (60) of the tube (16) from the downline side of the tube (16), the transport mechanism (28) including a plurality of drive rollers (30) which engage the tube (16) on only the outside of the tube (16) to pull the tube (16) downline without contacting the inside of the tube (16); (5) tube cutting means (34) downline of the transport mechanism (28) for cutting the tube (16) into a continuous elongate strip and thereby defining an open end of the central longitudinal cavity (60) of the tube (16), wherein the tube cutting means (34) is offset at an angle wrt. the downline direction, and wherein the (16) remains open and in tube form until the tube (16) is cut; and (6) a **fluid seal** (26) for substantially sealing the cavity (60) of the tube (16) to control the escape of pressurising fluid from the open end of the cavity (60), wherein a portion of the central longitudinal cavity (60) extends downline of the **fluid seal** (26), and the tube cutting means (34) is positioned downline of the **fluid seal** (60).

(Dwg.1/10

9/3,AB/5 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

002555032
WPI Acc No: 1980-73055C/198041
Heat-exchanger surface scale removal - by washing with boiling liq. contg. solid particles
Patent Assignee: ODESSA REFRIG IND RES (ODRI)
Inventor: ALEKSANDRO V I; **BERMAN M I**; GORBIS Z R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
SU 717520	A	19800225				198041	B

Priority Applications (No Type Date): SU 2593043 A 19780322

Abstract (Basic): SU 717520 A

Scale on the heat-exchanging surface, pref that of a horizontal tubular evaporator used for sea **water** desalination, can be **removed** by washing the surface with boiling liq. having suspended solid particles. In order to increase efficiency by periodic displacement of the surface separate sections into intensive liq boiling zone, the heat-exchanging surface is positioned so that it can rotate about the horizontal axis. The surface is turned through 180 degrees in one day. The liq level is maintained higher than the solid particles level.

12/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

03825817 INSPEC Abstract Number: A91039685
Title: Brans-Dicke cosmology with time-dependent cosmological term
Author(s): **Berman, M.S.**
Author Affiliation: Dept. of Astron., Florida Univ., Gainesville, FL, USA
Journal: International Journal of Theoretical Physics vol.29, no.12 p.1419-21
Publication Date: Dec. 1990 Country of Publication: USA
CODEN: IJTPBM ISSN: 0020-7748
U.S. Copyright Clearance Center Code: 0020-7748/90/1200-1419$06.00/0
Language: English
Abstract: Berman and Som's (1990) solution for a Brans-Dicke cosmology with time-dependent cosmological term, Robertson-Walker metric, perfect **fluid**, and perfect **gas** law of state solves the horizon, homogeneity, and isotropy problems without requiring any unnatural fine tuning in the very early universe, thus being an alternative model to inflation. The model also does not need recourse to quantum cosmology, and solves the flatness and magnetic monopole problems.
Subfile: A

12/3,AB/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

03825815 INSPEC Abstract Number: A91039683
Title: Brans-Dicke models with time-dependent cosmological term
Author(s): **Berman, M.S.**; Som, M.M.
Author Affiliation: Dept. of Astron., Florida Univ., Gainesville, FL, USA

Journal: International Journal of Theoretical Physics vol.29, no.12 p.1411-14
Publication Date: Dec. 1990 Country of Publication: USA
CODEN: IJTPBM ISSN: 0020-7748
U.S. Copyright Clearance Center Code: 0020-7748/90/1200-1411$06.00/0
Language: English
Abstract: More general solutions than those presented by Bertolami (1986) are deduced in the Brans-Dicke cosmology, endowed with a time-dependent cosmological term, for a Robertson-Walker metric and a perfect **fluid** obeying the perfect **gas** law of state.
Subfile: A

12/3,AB/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

03586265 INSPEC Abstract Number: A90050587
Title: Inflationary phase in Brans-Dicke cosmology with a cosmological constant
Author(s): **Berman, M.S.**
Author Affiliation: Dept. of Astron., Florida Univ., Gainesville, FL, USA
Journal: Physics Letters A vol.142, no.6-7 p.335-7
Publication Date: 18 Dec. 1989 Country of Publication: Netherlands
CODEN: PYLAAG ISSN: 0375-9601
U.S. Copyright Clearance Center Code: 0375-9601/89/$03.50
Language: English

Abstract: It has been shown that, for a perfect **fluid**, a perfect **gas** law of state, and the Robertson-Walker metric, an exponential phase in Brans-Dicke cosmology is possible, with both positive pressure and density, but not with the violated energy condition p=-p. The author demonstrates that the inclusion of a cosmological constant into the theory does not change that picture.
Subfile: A

12/3,AB/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

02921678 INSPEC Abstract Number: A87081521
Title: An experimental study of isothermal and boiling liquid jets
Author(s): Marshall, B.W., Jr.; **Berman, M.**
Author Affiliation: Sandia Nat. Lab., Albuquerque, NM, USA
Conference Title: Proceedings of the U.S. Nuclear Regulatory Commission Fourteenth Water Reactor Safety Information Meeting (NUREG/CP-0082) p. 293-317 vol.6
Publisher: Office Nucl. Regul. Res, Washington, DC, USA
Publication Date: Feb. 1987 Country of Publication: USA 6 vol. (xix+513+xviii+432+xix+424+xix+521+xix+580+xix+413) pp.
Conference Date: 27-31 Oct. 1986 Conference Location: Gaithersburg, MD, USA
Language: English
Abstract: Recent observations inside the Three Mile Island-Unit 2 reactor core have shown that about 20 tons of core material melted and poured into the lower plenum. The core material is believed to have poured through and around the holes in the structural plates, creating jets of molten corium falling through water. The experimental work described illustrates the coarse-mixing behavior of molten jets of iron/alumina falling through water. Significant fragmentation of the jet occurs for pour diameters of 4 to 16 cm. The breakup of a boiling-jet appears to depend on the generation of steam and is significantly different from **liquid-gas** or isothermal **liquid-liquid** systems.
Subfile: A

12/3,AB/5 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

02133233 INSPEC Abstract Number: A83107138
Title: Heat exchange and hydrodynamics during boiling on a horizontal tube bundle in a fluidized bed of solid particles
Author(s): **Berman, M.I.**; Chulkin, O.A.
Author Affiliation: Odessa Polytech. Inst. of Refrigeration Industry, Odessa, Ukrainian SSR, USSR
Journal: Inzhenerno-Fizicheskii Zhurnal vol.43, no.5 p.718-27
Publication Date: Nov. 1982 Country of Publication: Byelorussian SSR, USSR
CODEN: INFZA9 ISSN: 0021-0285
Translated in: Journal of Engineering Physics vol.43, no.5 p.1195-202
Publication Date: Nov. 1982 Country of Publication: USA
CODEN: JEPHAL ISSN: 0022-0841
U.S. Copyright Clearance Center Code: 0022-0841/82/4305-1195$07.50
Language: English
Abstract: The results are given on the experimental study of heat transfer and hydrodynamics with boiling on a horizontal tube bundle located

in a dispersed bed of solid particles and of this process hydrodynamics simulation by **gas** bubbling within the **fluid** filtration rate variation via the bed (0-3.5)v/sub li.f/. An analysis and correlation of experimental results are presented.
Subfile: A

12/3,AB/6 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1472991 NTIS Accession Number: DE89016033
Steam explosion studies with molten iron-alumina generated by thermite reactions
Beck, D. F. ; **Berman, M.** ; Nelson, L. S.
Sandia National Labs., Albuquerque, NM.
Corp. Source Codes: 068123000; 9511100
Sponsor: Department of Energy, Washington, DC.
Report No.: SAND-89-1086C; CONF-890739-4
1989 37p
Languages: English Document Type: Conference proceeding
Journal Announcement: GRAI9003; NSA0000
International colloquium on the dynamics of explosions and reactive systems (12th), Ann Arbor, MI (USA), 23-28 Jul 1989. Sponsored by Department of Energy, Washington, DC.
Portions of this document are illegible in microfiche products. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A03/MF A01
Recent vapor explosion experiments at Sandia National Laboratories have used water and melts prepared by thermite reactions ((approximately)3000 K), with specific interest in the effects of initial (pre-explosion) melt-water mixture properties and of trigger strength on the energetics of the reaction. Mixture behavior studies used a nominal 2 kg of melt that was dispersed into the water to form a ''coarse'' mixture by one of two ways: the first method employed a crucible that was submerged under the **water** and used a **gas**-driven piston and orifice combination to control melt ejection and thus mixture properties; the second technique simply reacted a compressed thermite billet in situ (underwater) and relied on the expansion of heated gas trapped within the billet to disperse the melt. Triggers (generated by firing a submerged detonator near the mixture) were applied at selected times that reflected different degrees of melt dispersion. Trigger strength effects have been investigated by use of a single drop of melt ((approximately)5 g) and various underwater pressure sources. Visually, the response of the melt drop to a trigger is a rapid radial expansion of fine particles. Quantitatively, the degree and rate of explosive expansion has been related to the trigger strength. Final-to-initial volume ratios of over 100 have been observed for the strongest triggers, with growth periods on the order of 5 ms. Scaling laws common to conventional underwater explosions have been applied to the experimental data and give impulses that are the same order of magnitude as generated by hydrodynamic code calculations. 54 refs., 12 figs., 3 tabs.

12/3,AB/7 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04132923
E.I. No: EIP95042662858
Title: FSU's natural **gas liquids** business needs investment
Author: Plotnikov, Valeri S.; **Berman, Michael**; Angerinos, Gabriel F.
Corporate Source: Poten & Partners Inc, New York, NY, USA
Source: Oil and Gas Journal v 93 n 11 Mar 13 1995. 4pp
Publication Year: 1995
CODEN: OIGJAV ISSN: 0030-1388
Language: English
Abstract: The restoration of the liquids business at the former Soviet Union (FSU) represent a rich investment opportunity. LPG in the FSU is not only produced from associated and nonassociated natural gas, condensate and refinery streams but also from ShFLU. Due to the irrevocable loss of FSU's reserves of LPG, production in Russia declined by about 40% between 1990 and 1994. This decline is attributed to falling production of oil and ShFLU which are both considered to the symptoms of FSU's deep economic recession and soaring rail transportation costs.

12/3,AB/8 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

09909772 PASCAL No.: 92-0119599
High-temperature hydrogen combustion in reactor safety applications
STAMPS D W; **BERMAN M**
Sandia National Laboratories, Albuquerque NM 87185, USA
Journal: Nuclear science and engineering, 1991, 109 (1) 39-48
Language: English

12/3,AB/9 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

09060727 PASCAL No.: 90-0229057
Density perturbations in a flat universe
BERMAN M S
Univ. Florida, dep. astronomy, Gainesville FL 32611, USA
Journal: General relativity and gravitation, 1990, 22 (4) 389-392
Language: English
Une solution bien connue pour un modele plat en relativite generale obeissant a la metrique de Robertson-Walker, un tenseur d'energie de fluide parfait et une equation d'etat de gaz parfait, avec un parametre de deceleration constant, presente des perturbations de densite scalaire croissantes, a condition que q>o. Cette etude generalise les resultats de Weinberg pour la phase de radiation, et montre que tout modele realiste de ce type contient des instabilites gravitationnelles

12/3,AB/10 (Item 1 from file: 315)
DIALOG(R)File 315:ChemEng & Biotec Abs

176889 CEABA Accession No.: 17-12-010947 DOCUMENT TYPE: Journal
Title: Pipe loop or expansion joint?
AUTHOR: **Broyles, R.K.**
JOURNAL: Chemical Engineering, New York, Volume: 92, Issue: 21
, Page(s): 103-104,106

CODEN: CHEEA3 ISSN: 0009-246
PUBLICATION DATE: 1985 (850000) LANGUAGE: English
ABSTRACT: Rohrleitungen unterliegen Temperaturschwankungen, aendern ihre Laenge oder ueben ein Moment auf die Ausruestung aus. Der Autor beschaeftigt sich mit dem wirtschaftlichen Aspekt fuer den Einbau der einen oder anderen Art von Dehnungsausgleichen. Schematische Darstellung beider Moeglichkeiten, der Rohrform bei Kreislaufkonfiguration und beim Dehnungsausgleicher. Angabe von Gruenden fuer den Einbau. Beschreibung von Werkstoff- und Arbeitskosten fuer beide Moeglichkeiten. Es zeigt sich, dass die Beschaffungskosten des Dehnungsausgleiches hoeher sind, aber die jaehrlichen Betriebskosten niedriger ausfallen als beim Rohrkruemmer. (Maeder)

12/3,AB/11 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

002337140
WPI Acc No: 1980-E3586C/198020
Priming valve for submersible pump - has piston areas proportioned to give secure operation without flutter
Patent Assignee: WORTHINGTON CORP (WORG)
Inventor: **BERMAN M**; SLAUGHTER J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 1703187	B	19800508				198020	B

Priority Applications (No Type Date): US 67631672 A 19670418

Abstract (Basic): DE 1703187 B

The pump has a bypass connection(72) from the discharge to the suction with a valve(80) in it, which opens when flow ceases. This allows **liquid** from the **discharge** container to return to the suction to reprime the pump.

The valve has a plunger (106) which closes on the valve seat(98). The plunger is lifted by a spring(120) in a space open(128) to atmosphere. Discharge pressure(77) is admitted(134) to a piston(112) on top of the plunger. It also reaches the inside of the piston through a bore in the plunger. The top surface(114) of the piston is larger than the inside surface(118) within the bore

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File 342:Derwent Patents Citation Indx 1978-04/200455
       (c) 2004 Thomson Derwent
? S PN=US 6630411
? MAP PN/CT=
? MAP PN/CG=
? MAP PN

SYSTEM:OS  - DIALOG OneSearch
  File 350:Derwent WPIX 1963-2004/UD,UM &UP=200459
        (c) 2004  Thomson Derwent
*File 350: For more current information, include File 331 in your search.
Enter HELP NEWS 331 for details.
  File 347:JAPIO Nov 1976-2004/May(Updated 040903)
        (c) 2004 JPO & JAPIO
*File 347: JAPIO data problems with year 2000 records are now fixed.
Alerts have been run.  See HELP NEWS 347 for details.
? EX

Set     Items   Description
S1          3   PN=AU 9949817 + PN=EP 1108266 + PN=EP 459019 + PN=US 20020-
             06468 + PN=US 4724677 + PN=US 5009073 + PN=US 6461675 + PN=WO
             200003420
S2          1   S1 AND (LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE -
             OR AQUAS OR H2O OR WATER??)(3N)(GAS OR GASES OR GASEOUS? OR G-
             ASIF? OR VAPOR? OR VAPOUR? OR FUME? OR FUMING? OR EFFLUV? OR -
             EFFLUENT? OR EFFUS? OR EFFLUX? OR VENT? OR DISCHARG? O...
S3          2   S1 NOT S2
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File 342:Derwent Patents Citation Indx 1978-04/200455
       (c) 2004 Thomson Derwent
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SYSTEM:OS  - DIALOG OneSearch
  File 350:Derwent WPIX 1963-2004/UD,UM &UP=200459
        (c) 2004  Thomson Derwent
*File 350: For more current information, include File 331 in your search.
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        (c) 2004 JPO & JAPIO
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? EX

Set     Items   Description
S1          3   PN=AU 9949817 + PN=EP 1108266 + PN=EP 459019 + PN=US 20020-
             06468 + PN=US 4724677 + PN=US 5009073 + PN=US 6461675 + PN=WO
             200003420
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             ASIF? OR VAPOR? OR VAPOUR? OR FUME? OR FUMING? OR EFFLUV? OR -
             EFFLUENT? OR EFFUS? OR EFFLUX? OR VENT? OR DISCHARG? O...
S3          2   S1 NOT S2
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File 342:Derwent Patents Citation Indx 1978-04/200455
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? S PN=US 6630411
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? MAP PN/CG=
? MAP PN

SYSTEM:OS  - DIALOG OneSearch
  File 350:Derwent WPIX 1963-2004/UD,UM &UP=200459
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Set     Items   Description
S1          3   PN=AU 9949817 + PN=EP 1108266 + PN=EP 459019 + PN=US 20020-
             06468 + PN=US 4724677 + PN=US 5009073 + PN=US 6461675 + PN=WO
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S2          1   S1 AND (LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE -
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2/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008643769
WPI Acc No: 1991-147799/**199120**
XRAM Acc No: C91-063927
XRPX Acc No: N91-113460
Fast cycle cryopump for vacuum chamber - has probe portion with flexible part and rigid head end
Patent Assignee: MARIN TEK INC (MARI-N)
Inventor: FORREST S M; FYFE D T; HOUSMAN J J; MISSIMER D J
Number of Countries: 009 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5009073	A	19910423	US 90517325	A	19900501	199120	B
EP 459019	A	19911204	EP 90123110	A	19901203	199149	
EP 459019	A3	19920923	EP 90123110	A	19901203	199339	

Priority Applications (No Type Date): US 90517325 A 19900501
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 459019	A				

Designated States (Regional): CH DE ES FR GB IT LI NL

Abstract (Basic): US 5009073 A

Fast cycle cryopump for vacuum chamber (12) comprises a probe with a rigid end (84) and flexible feed section (26) whereby the head end can be variably positioned within the chamber. The probe has a feed tube and outer return tube. A valve is provided to allow relatively cold refrigerant to be circulated through during a vacuum cycle in the chamber to condense **water vapour** onto the flexible probe section which is then released to the immediate surroundings at the end of the cycle when the valve is switched to allow relatively hot refrigerant to flow through the probe.

Pref. the flexible section comprises an inner PTFE tube and an outer corrugated stainless steel tube. Pref. a noise attenuating sleeve of woven polyester fabric surrounds the inner flexible tube. The fabric is pref. retained by heat-sealing to end vinyl tube connectors.

ADVANTAGE - The probe being flexible is easily installed with minimal time and readily positioned within the chamber. The probe can reduce the noise of cryogenic gases passing through it. (8pp Dwg.No.2/4

3/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012975836
WPI Acc No: 2000-147685/**200013**
XRAM Acc No: C00-046355
XRPX Acc No: N00-109279
Forming a copper film with good adhesion on a substrate for semiconductor integrated circuit interconnects, e.g. inlaid copper metal lines and plugs
Patent Assignee: CVC INC (CVCC-N); CAMPBELL D R (CAMP-I); LIU Z (LIUZ-I); MOSLEHI M M (MOSL-I); OMSTEAD T R (OMST-I); PARANJPE A P (PARA-I); SHANG G (SHAN-I); VELO L A (VELO-I); CVC PROD INC (CVCC-N)
Inventor: CAMPBELL D R; LIU Z; MOSLEHI M M; OMSTEAD T R; PARANJPE A P; SHANG G; VELO L A
Number of Countries: 087 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200003420	A2	20000120	WO 99US15583	A	19990709	200013 B
AU 9949817	A	20000201	AU 9949817	A	19990709	200028
EP 1108266	A2	20010620	EP 99933852	A	19990709	200135
			WO 99US15583	A	19990709	
US 20020006468	A1	20020117	US 98113852	A	19980710	200212
US 6461675	B2	20021008	US 98113852	A	19980710	200269

Priority Applications (No Type Date): US 98113852 A 19980710
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200003420	A2	E	38	H01L-021/00	
Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
AU 9949817	A			H01L-021/00	Based on patent WO 200003420
EP 1108266	A2	E		H01L-021/285	Based on patent WO 200003420
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
US 20020006468	A1			B05D-005/12	
US 6461675	B2			C23C-016/06	

Abstract (Basic): **WO 200003420** A2
Abstract (Basic):

NOVELTY - Copper film is formed on a substrate by depositing a seed layer on the substrate according to first predetermined conditions and depositing a copper layer over it through second predetermined conditions including chemical vapor deposition (CVD). The predetermined conditions are adhesion promotion techniques that repair the interface of the copper film and the substrate.

USE - For forming semiconductor integrated circuit interconnects, e.g. inlaid copper metal lines and plugs. It is particularly for forming a copper interconnect on a substrate diffusion barrier (claimed).

ADVANTAGE - New method deposits a seed layer that has a good adhesion with the underlying layer of the substrate. A bulk layer of copper can then be deposited on the seed layer to ensure that the copper interconnect will maintain good adhesion throughout an entire process of semiconductor chip fabrication. This leads to less complex

fabrication process and types of equipment required to deposit the copper layer film. Reaction chambers required for promoting copper layer adhesion are compatible with vacuum-integrated cluster equipment leading into a simpler and more reliable deposition process. The method increases the commercial production of semiconductor chips. It is also scalable to small feature sizes of high aspect ratio structures that are commonly encountered in advanced interconnects.

pp; 38 DwgNo 0/6

3/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007436557
WPI Acc No: 1988-070492/**198810**
XRAM Acc No: C88-031781

Operating cryopump with simultaneous cryo-surface regeneration - carried out by secondary chamber exhausting frost removed from cryo-surface, without thermally cycling cryopump

Patent Assignee: FOSTER C A (FOST-I)
Inventor: FOSTER C A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4724677	A	19880216	US 86917197	A	19861009	198810	B

Priority Applications (No Type Date): US 86917197 A 19861009
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4724677	A		11		

Abstract (Basic): US 4724677 A

High throughput cryopump for continuous operation with cryopumping surface regeneration for a selected gas comprises (a) a pump housing having an interior volume; (b) a cryopumping surface within the interior volume communicating with an inlet for the gas; (c) cryogenic cooling in thermal contact with the pumping surface, the cooling and the surface maintained at a lower temperature than the gas to condense the gas on the pumping surface; (d) the pumping surface is regenerated by selectively removing the condensate from the pumping surface and expelling the removed condensate while the pump is operating so that the cryopump can continuously operate without thermal cycling of the pumping surface is being regenerated; in which (e) the surface regeneration means comprises a secondary chamber proximate the cryopumping surface to remove and to receive the removed condensate without affecting pressure within the cryopump.

ADVANTAGE - The pump has the potential of pumping 100 torr - l/s at a speed of 10,000 l/s, which is tritium compatible and can operate continuously.

0/4